The
SHIPPING WORLD
AND SHIPBUILDING & MARINE ENGINEERING NEWS

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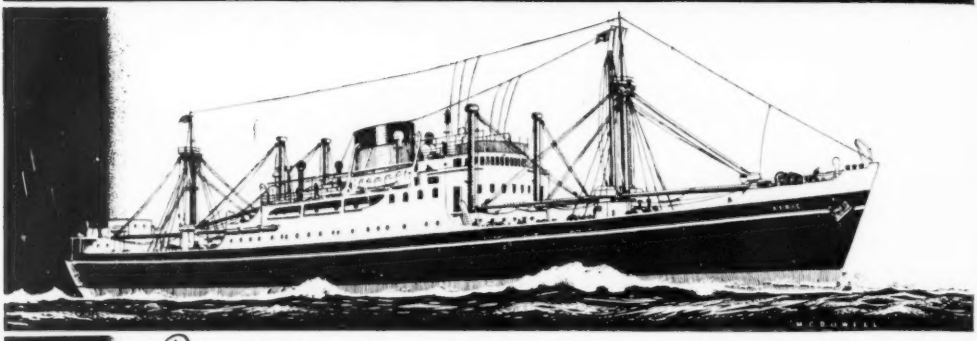

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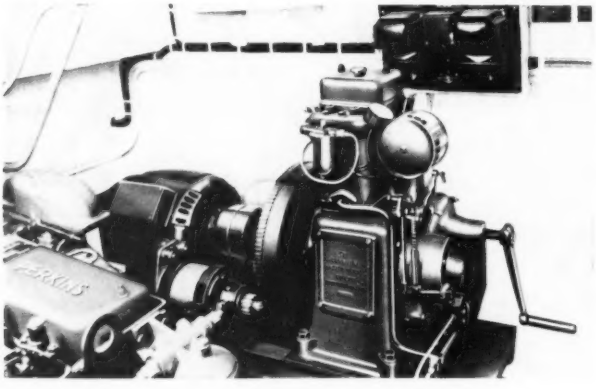

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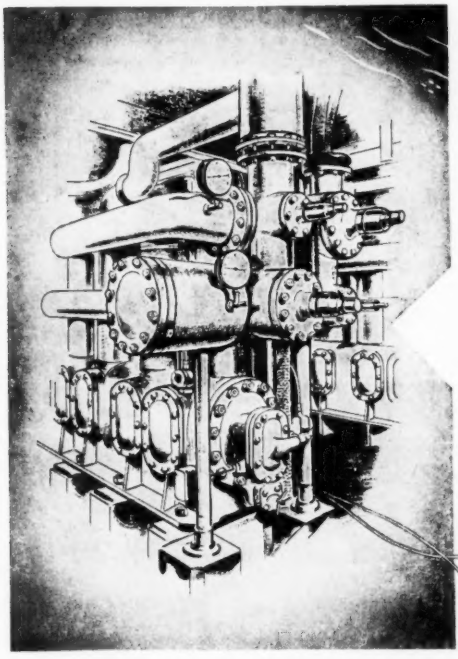

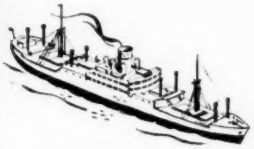

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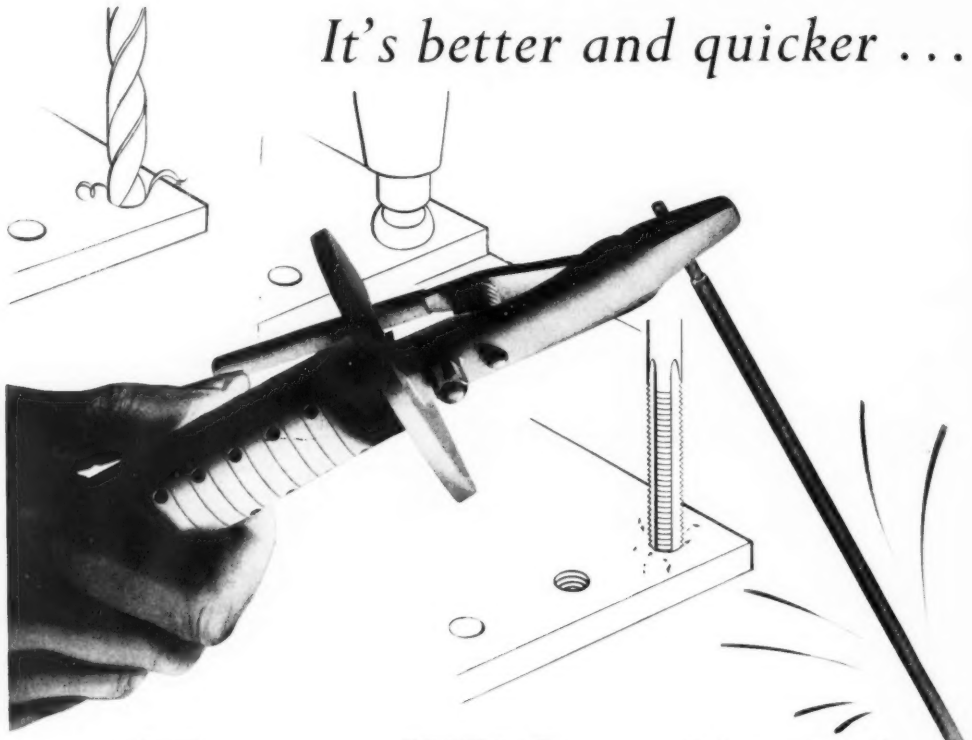

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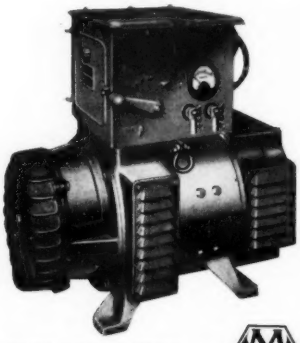

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THE SHIPPING WORLD

INVENTORS AND FUTURE SHIP DESIGNS

THE WAY of the inventor has invariably been hard, even in the early beginnings of the British patent register. There can be little doubt that the patent taken out in 1631 by a young Scotsman, David Ramsay, designed to provide a mechanism "To Make Boates, Shippes and Barges to goe against stronge Winde and Tyde" occasioned more rough humour than technical or financial interest. Though little is known of Ramsay's ideas, other than that they were beyond the capacity of the materials and industrial skill of the time, he has his place in the long line of pioneers which produced, in the second half of the nineteenth century, another inventor, Sir Charles Parsons, whose efforts were to be so successful that they secured for Britain a lead in marine engineering which we still retain. While it is easy to dismiss the ideas of any one man as being fantastic, inventors as a class must be treated with some respect; the principles they put forward can sometimes be condemned at the time, but circumstances may alter so as to make their ideas both practicable and advantageous. The number of inventions patented also forms a useful indication of the attention being given to various aspects of any industry, and the wise industrialist will take steps to be kept informed of these attempts to make further progress. No industry can remain static, least of all shipbuilding, which must produce vessels to meet competition from the world's maritime nations.

There may be some value, therefore, in considering some of the patents filed within recent years and their possible effects on the future design of ships of all kinds. During the past two years at least 30 patents concerning the layout and construction of the hull have been filed. Some are of incidental importance, being local in their effect, but bringing with them considerable advantages as, for example, the several patents relating to methods of welding the shell frame of ships' sidelights, instead of the system of a large shell flange with rivets or bolts through the plating. This is a distinct improvement on earlier practice and the new sidelights are being fitted in ever increasing numbers, giving a completely watertight joint, which greatly reduces maintenance costs, at the same time facilitating fitting at the ship. Another patent seems to offer the solution to the begriming of passenger decks from particles of soot, etc., emitted from the funnel. Other patents are of greater structural importance like the Gotaverken plan for fanning out stiffeners from the inner bottom at the middle line towards the deck, the greater spacing of stiffeners towards the top allowing for decreased static water pressure on the bulkhead. Perhaps the best way of presenting a review of recent patents, assuming the more interesting of them to be successfully applied, is to describe the kind of ships we may see in years to come.

They will have machinery aft, whether tanker, cargo ship or passenger liner. Wooden hatch covers will be forgotten, all hatchways being of equal size with identical systems of steel or aluminium covers, giving watertightness without the use of tarpaulins. Derricks will be used merely to place cargo lifts in various suitable positions within the hatchways, except in tramp vessels which may still need the ship's normal lifting appliances in foreign ports. Not a rivet will be seen, whether in main hull or superstructures, and whether the ship is of steel or aluminium alloy. Ships will be painted, or perhaps treated is a better word, only when undergoing survey and repairs every three or four years, and fouling and corrosion will be only memories. The master will not have to guess at the stability of his ship, the metacentric height being shown at all times on a dial on the chartroom table. Navigation at full speed in fog will be so commonplace as to be a matter hardly worthy of mention. Time in port will be only a fraction of that of today and delays for engine repairs a thing of the past. Ships will have either one large unit specially designed to need overhaul and repair at long intervals, or the propulsion will be by means of several small units, steam, or internal combustion turbine with electric transmission, arranged for speedy replacement in port by spare units. Cargo ships of 20 knots will be normal practice owing to decreased hull weight, greater economic efficiency of propulsion, and the relatively high cost of officers' and crews' salaries and wages. This is the kind of ship we may see in the future and one in the construction of which British shipyards will continue to lead, providing that the present admirable measures for research continue and that every encouragement be given to the individual pioneer.

Current Events

The Coming Budget

THE BUDGET for the new financial year will be the most critical which has ever been introduced, not only for the maritime industries but for all industries. Shipowners, in particular, are entitled to special consideration, as they have repeatedly urged. They ought to be laying down keels to replace tonnage which is out of date, but the Chancellor of the Exchequer is taking the money which otherwise would be spent in wages in the shipbuilding areas. As the Chamber of Shipping has emphasised, rates of income tax and profits tax, by depriving the industry of a half of even those profits which are retained in the business, have magnified the inequities in the system itself, and the prospect of continued high rates of taxation makes it the more important that the basis of taxation should be such that the least possible harm is done to those industries on which the nation depends for its wellbeing and for its safety. "The incidence and effects of the present system of taxation are all the time steadily diminish-

ing the power of the industry to maintain the modern and efficient fleet by which alone it can meet competition and continue its services to the nation. No taxation relief will be of any avail if it be delayed until there are no resources to replace tonnage because of excessive taxation in earlier years." Shipowners decline to believe that Ministers want to drive them into a corner so as to justify some crazy scheme of nationalisation, but there is reason to fear that that is precisely the policy of many Socialists. Their aim is to set up a Socialist State in which all the principal industries will be State-owned and State-controlled. The Prime Minister himself once declared that Capitalism and Socialism could not exist side by side and that free enterprise would have to be suppressed in what is called "the Welfare State." The Government has already got a stranglehold on all the industries of the country now that the coal mines, steel, inland transport, power and light have been taken over. The various boards administer monopolies, whose products and services are essential to private industry. Having made so much progress, the Socialists will be more or less content to go into opposition for a time, confident that, with the normal swing of the pendulum, they will in due course come back to office to pursue their policy of gradualness. They are counting on the failure of the great industrialists to form a united front, while they themselves have done so. Unity, they claim, will be their strength and disunity the weakness of private enterprise.

The Anglo-Argentine Quarrel

THE NEGOTIATIONS on matters of trade which have been reopened at Buenos Aires at the suggestion of the Ministry of Food are expected to lead to a resumption of meat shipments at an early date. Mr. Maurice Webb will, of course, have to pay a higher price than he was ready to do a few months ago, but the defeat will, it is expected, be so mixed up with the other details of the agreement that it will not be too apparent. He has bluffed so long that he can do so no longer in view of the political pressure in and out of the House of Commons, to which he has been subjected recently. It is anticipated that the representatives of the Republic, anxious for peace, will do all in their power to ease the situation by joining in this conspiracy to save the face of the Minister of Food. Whether Mr. Webb will accept the challenge to abandon bulk buying on the condition that Argentina also gives up bulk selling is another matter. It is obvious that if the traders, who are experts, were given the task of negotiating, they would do much better than the delegation which is now at Buenos Aires. The Socialists in the country are, however, wedded to the idea of bulk buying, but, on the other hand, it is recognised that the reduced meat ration has made the Party very unpopular in the country and that all the signs are that the Government would be defeated if it had to face a General Election at any time in the near future. In any event, it is unlikely that the British delegation will return without an agreement. So there is a good prospect that the waste of valuable refrigerated carrying space which has been going on since July last will cease at an early date. How that is brought about is a matter of indifference to the shipowners concerned so long as they get the cargoes. Mr. W. C. Warwick and others who are interested in the ending of the quarrel will not care how agreement is reached, for shipowners are traders and not politicians.

Waste of Carrying Power

IT IS now realised that we are entering on yet another crisis owing to the failure of the Government's policy of bulk buying. The sudden demand for tonnage for coal from the United States, Nigeria and India has completely disorganised shipping. Carrying power is being wasted to an extent never before experienced, owing to the sudden demands made upon it by the various buying departments in and about Whitehall, and the result must be a fall in exports. Sir William Rootes has exposed the gravity of the position. Cars awaiting shipment to dollar markets are being delayed as vessels are sailing to those areas in ballast. The reason for this fantastic state of affairs, of course, is that the turnround is so slow these days that owners cannot afford the loading time. The *Board of Trade Journal* throws light on the prevailing scandal. An unusually high tonnage of vessels left U.K. ports in ballast during January. Clearances in that month were 2,340,000 tons, compared with 1,850,000 tons in January 1950. Of the 2,340,000 tons, 1,060,000 tons net related to vessels which loaded bunkers only, this figure being 56 per cent above that for a year earlier, and the highest since October 1948. Tonnage cleared with passengers only (86,000 tons) was 42 per cent less than in the previous month, and lowest for a year. Entrances of vessels with cargo at U.K. ports during January at 4.78 mn. tons were, against seasonal trend, 2 per cent higher than in December, and on a daily average basis were the highest since October. Compared with January 1950, the daily movement was 16 per cent higher. Total tonnage cleared with cargo was 3.35 mn. tons net. Foreign tonnage accounted for 38 per cent of total entrances with cargo, against 37 per cent in December. Among shipping entering in ballast (933,000 tons net) the tonnage with passengers only, 126,000 tons, was the lowest for nearly a year, although 46 per cent above January 1950.

The Outlook for Coal

WHAT IS to happen to the coal mining industry? It will remain under the National Coal Board even when the present Government goes into the wilderness for a time. No Party is in favour of a return of the industry to the former owners. So the hope of the future lies in the reform of the central authority. A change of government would no doubt be followed by a measure of decentralisation, with a consequent reduction in overhead costs which would be reflected in the price of coal for domestic consumption, for export and for shipment as bunkers. It is believed that the miners' unions would welcome such a reform as the men miss the human contacts with which they were familiar in the old days. The regional boards should, of course, be given more autonomy so that a sense of pride in achievement may be excited. As far as exports are concerned, much will depend on the extent to which the costs of foreign-mined coal rise. In trade union circles it is hoped that the miners in Germany and Poland will agitate for higher wages, if not for shorter hours, but that may prove a will o' the wisp, as it has done in the past. In any event, exports will be subject to the higher freight rates on the railways and there is no saying yet how heavy that new burden may be. So, regarding the coal problem from every angle, there are many uncertainties, and exporters have reason to exercise the greatest caution. One thing is certain. The coal industry will never again provide anything like the supplies which it did before the First World War, and even the Minister of Fuel and Power evidently fears that it will be a long time before the miners produce much coal over and above what is needed for industrial and domestic use in this country.

Clan Line Reorganisation

THE Clan Line reconstruction and merger scheme is a complex affair, designed partly to facilitate possible death duty payments and partly to secure a wider and freer market in the equity capital of the company. There seems every possibility that the plan will be found acceptable by all interested parties. Concerned as partners in the scheme are Clan Line Steamers, Ltd., the Foreign Railways Investment Trust, and Cayzer, Irvine & Co. Clan Line, whose chairman is Lord Rotherwick, head of the Cayzer family, is at present controlled by Cayzer, Irvine, who manage the

company, and whose capital is privately held. Foreign Railways Investment Trust, with its net assets of £640,000, passed into the hands of Lord Rotherwick in 1949 when he acquired £1,485,000 in preference shares and £1,474,000 of the Trust's ordinary capital. It is now proposed, by conversion of Cayzer, Irvine into a subsidiary of Clan Line, to give the latter control over the management of its shipping interests. Further, and in order to make funds readily available for death duty disbursements, it is intended to make securities and shares available to Cayzer, Irvine shareholders who desire to replace their holdings in that company by marketable material. In brief, the scheme will have the effect that Clan Line will assume control of the management company, in which will reside the shipping shares now in the ownership of Clan Line. At a cost of £1,569,000, Clan Line will take over the full equity in the group's trading interests and in the profits arising therefrom. These are estimated at £331,800 per annum after a 10 per cent profits tax and other charges, giving a 21 per cent proportion of earnings to cost on the reasonable basis of five years' purchase. After the reorganisation of its capital, assets of F.R.I.T. will amount to £4,315,000, earnings on which are estimated at £240,000 subject to tax. It may further be calculated that, if and when the scheme becomes effective, earnings of Clan Line will rise from under 200 per cent to well over that level. Like all ingenious plans the scheme has its complications, but its advantages are manifest and it should go through.

Dock Labour in Manchester

For some time dockers in Manchester have been working on piece rates for certain classes of cargo, and the Manchester Steamship Owners' Association, whose annual meeting was held yesterday, urged that this principle should be extended to embrace the loading of ships for all kinds of cargo. After much deliberation, a scheme was agreed last July, based on tonnage per gang per hatch. Some small improvement was noted in the early months of operating this scheme, but the chairman of the Association, Mr. Alan N. Hunt, said that on the whole the results had been a little disappointing. They had hoped to get the rate of loading geared up to the level at which discharging now stands. Mr. Hunt said he hoped that the good sense of the dock worker would cause him to "have a go", and do a fair day's work for a fair day's pay, and he looked forward to the abolition of restrictive practices, particularly as far as mechanisation and manning were concerned, so that every member of a gang could be usefully and gainfully employed. Recent experience, however, in the port of Manchester, has done little to support this optimism, in view of the number of dockers who came out in favour of the Communist-led Liverpool dockers last month. As Mr. Hunt pointed out, the fact that the dockers' trade union had agreed an increase in wages with the shipowners, and were satisfied, shows the utter irresponsibility of the organisers of the stoppage. He could not previously remember an occasion when an increase in wages came into operation and brought about a strike. Yet a similar phenomenon occurred on Merseyside, it will be recalled, after the latest wage agreement for shipbuilding and repairing workers. The Communists are past masters in the craft of delusion, as these recent strikes have proved.

The Cost of Hull Insurance

It is too early as yet to assess fully the effect of the revision of the Joint Hull Understanding, but it is patent that it will have the effect of materially increasing the cost of hull insurance to shipowners. In the case of an ownership with a record, over the last three completed years, which shows a credit balance of 40 per cent or more of premiums over claims, the new Understanding will require an increase of 10 per cent in rate on the next renewal. Where the claims record is such that the credit balance of premiums over the last three years is less than 40 per cent, the increase in rate will be governed by the sliding scale of the Joint Hull Understanding's formulæ, plus an additional 10 per cent after the appropriate formula has been applied. The most severe increase would be made in the case of a risk with an aggregate value of less than £7,500,000, which over the last three years had brought a loss to underwriters. The increase, according to the sliding scale of Formula A, would, in such a case, be one of 30 per cent, to which a further 10 per cent would have to be added, so that the increase would amount to one of 43 per cent.

A Considerable Addition

This is certainly a considerable addition to an insurance bill that may already be a serious burden on a shipowner's budget. On the other hand, the underwriters, in such a case, have been carrying the risk of the perils of the seas without any remuneration for three years, irrespective of what any previous history of the risk may have been, so that it cannot be said that they are not entitled to a readjustment of premium which will at least afford them a reasonable chance of making some profit. Shipowners realise, as well as any, that the fundamental principle of marine insurance is to spread the risk of loss or damage. If underwriters were to carry on their business without some margin of premium over claims for any considerable period, they would soon abandon so unprofitable an undertaking for one promising a better return for their time and money. Their function is to create a pool out of which claims can be met. If that pool were to run dry, the security on which a shipowner relies to meet the fortuitous losses arising out of his business would disappear.

Increase in Air Travel

Air traffic figures for the first nine months of 1950 show a considerable increase over those for the previous year. With the figures for the last quarter of 1950 still to come in, the volume of air traffic is already within 1 per cent of the total for the whole of 1949. Whereas the number of journeys by sea to and from the United Kingdom (4,175,000) was 3 per cent higher in the first nine months of 1950 than in the same period of 1949, journeys by air (1,170,000) showed an increase of 25 per cent. Compared with the same period of 1938, sea traffic declined by 6 per cent and air traffic was six times greater. On the other hand, it must not be forgotten that the total number of passengers carried by sea is four times as great as the number carried by air. Passengers by sea during the period concerned totalled 4,175,000, while air passengers numbered 1,170,000. The movement of passengers as a whole shows an increase of 7 per cent over the previous year, but a significant feature of the latest Board of Trade returns is that travel between the United Kingdom and places outside Europe is over 60 per cent greater than in 1938. Air travel in this category, which was negligible before the war, now accounts for 30 per cent of the total. Emigration accounts for a considerable part of seagoing traffic with non-European countries, and British immigrants travelling by sea, numbering 50,000, were 14 per cent greater than last year, while British emigrants, numbering 98,000, showed a decline of 10 per cent.

More Retrospective Increases

The practice of increasing charges affecting the working of ships, and then giving them retrospective force, so that voyage accounts which have been closed become subject to additional expenditure, is strongly to be condemned. Since the war there has been quite a

crop of instances of this kind, which led the Baltic and International Maritime Conference in 1949 to pass a resolution drawing attention to the unfairness of this practice as an obstacle to the efficient conduct of the shipping industry. Now another example has been reported from Finland, and is discussed in the current circular issued by the Conference. The Finnish Government has granted two rises in labourers' wages, the first retrospective to November 20 and the second to January 22 last. As a consequence the stevedores have notified shipowners that the 1950 tariffs have been raised by 9.25 per cent for vessels having loaded or discharged in Finnish ports after the first date and by 13.5 per cent after the second date. As the Conference remarks, it is a questionable procedure for a Government to approve of wages, taxes or other charges to be paid by foreign shipowners with retrospective force. Shipowners have no means of foreseeing such charges, nor, indeed, of recovering them. A hopeless position would arise if, long after accounts have been settled, shipowners must expect to get demands for additional payments. How can a shipowner calculate the freight rate he must hold out for if he is liable to retrospective increases in tariff rates? Must he incorporate in the terms of contract an additional clause covering himself against retrospective increases in port charges? One solution to the problem put forward by the Conference is that local employers should calculate the total amount due to be covered by retrospective increases in wages, and impose a surcharge with effect from a future date, to be removed when the difference has been covered. This would at least enable shipowners to include this surcharge in their freight calculations.

Breaches of Immigration Regulations

ONE of the principal subjects dealt with in the annual report of the North of England Protecting & Indemnity Association is that of the liability of shipowners for breach of immigration regulations in respect of stowaways and deserters. The number of claims dealt with by the Association during 1950 was slightly less than in 1949, but one of them concerned 20 Chinese stowaways who were discovered on arrival at an Australian port. Although these men were repatriated, a fine of £2,000 was imposed on the ship, and no refund could be obtained. Masters are therefore again strongly advised to search diligently for stowaways, not only at loading ports but also at bunkering stations, where the natives have a favourite dodge of concealing themselves in the bunkers until the ship is well at sea. Close vigilance, it is stated, is required in Argentine and United States ports. In America, steps are being taken, in conjunction with American shipowners, to oppose the most objectionable clauses of a new Bill which proposes not only to tighten the present immigration regulations but also to impose heavier penalties on vessels, and practically deprives the shipowner of the right to appeal. The Argentine regulations, it is noted, now demand the payment of heavy sums in cash within 24 hours of the desertion of a member of a ship's crew, or when passengers have not been allowed to land because they cannot comply with Argentine immigration laws. These deposits are forfeited unless the individual has been repatriated within one year. The P. & I. Associations perform a valuable service to shipowners in protecting them against the consequences of events over which they have no control. It is noted than over 1,000,000 tons of shipping are represented in the North of England Association, which has appointed Mr. Leslie Mann as chairman in succession to Mr. James Shearer, and Mr. J. W. Duncan, of Cardiff, as vice-chairman for the ensuing year.

New Decca Transmitter Chain

A NEW chain of Decca transmitting stations is to be set up in Western Germany. Although intended primarily as an air navigational aid, this chain will also give Decca coverage to shipping in an area of the North Sea. The Decca Navigator was chosen for this purpose after an extensive examination of the available navigational aids had been made by the German Ministry of Transport and the British, French and American elements of the Civil Aviation Board. The equipment for the four transmitting stations needed to form the chain is to be manufactured by Telefunken, under licence to Decca. On the aviation side, the chain will be used in conjunction with the "Flight Log" developed recently by Decca, which when fitted in an aircraft in an area with Decca coverage keeps a continuous and automatic plot of the position of the aircraft. On the marine side, the German chain will afford coverage in the North Sea, off the German and Dutch coasts. This area is already covered by either the English or the Danish chain, but both are here near their extreme range, and the new chain will give better accuracy. The German chain is the fifth Decca chain to be approved. Two, the English and Danish, are in operation, and two more, at present known as the North British and West British, are under construction. When all are completed, Decca fixes will be obtainable with a high degree of accuracy in all the waters round the British Isles, as well as in the southern parts of the North Sea and Baltic.

Radio-Controlled Ship Models

IN general it is true to say that handiness is a quality which is more important in warships than merchant ships. There are cases, however, where the ability to turn quickly may be of great use to commercial vessels, and for this reason some interest attaches to the work on the radio control of ship models which is being carried out at the Admiralty Experiment Works at Haslar. For all warships, and particularly for destroyers and M.T.Bs., the ability to turn quickly at high speed is important, and extensive trials of steering qualities are made by the A.E.W. with self-propelled models. These models, which are run in Horsea Lake, may be as much as 26 feet in length, and have hitherto been controlled either by a helmsman or by a time clock. The model starts out from the side of the lake and then describes a complete circle, while its movements are recorded by a special camera. At the same time motor speed, rudder torque and pressure, and angle of heel are recorded automatically. Neither method of steering has proved entirely satisfactory. The helmsman is likely to shift his weight while the model is turning, and the weight of a man is too great to be acceptable in M.T.B. trials. With the clock, the model has to be retrieved by a motorboat after each run, which wastes time. The ordinary methods of radio control used by ship modellers do not give a sufficiently flexible control for experimental purposes, and two new methods are being developed at Haslar. One, which has been completed, employs a telephone-type dial switch by which signals are sent to the model. The model can be stopped and started, the engine speed varied, and helm applied in five degree steps. This method will soon be in use at Haslar. It has disadvantages, however, as it is bulky (the shipborne unit weighs 27 lb.) and time is spent in dialling a code number. A further method is in the development stage in which control is achieved by varying a modulating frequency imposed on a carrier wave. This method gives promise of good results.

SAYINGS OF THE WEEK

NAVAL ENGINEERING RESEARCH

"At the present time the Admiralty is sparing no pains to be in the lead in developing the art of marine engineering, and out of a very large sum devoted to research, not less than one-quarter is devoted to projects concerned with the development of marine engineering."—*Vice-Admiral Sir Michael Denny*, Third Sea Lord.

COSTS AND RATES

"If owners could be sure of full or even moderately full cargoes in both directions, and of freight rates remaining at a reasonable level, the problem of soaring operating costs could be faced, if not with perfect equanimity, then at any rate with a moderate degree of confidence."—*Mr. H. W. R. Ogram*, chairman of the Shipping Committee, Hull Chamber of Commerce.

ON THE "BALTIC"

CONTINUING DEMAND FOR AVAILABLE TONNAGE

By BALTRADER

IN ORDINARY times freights are weak when grain chartering is on a small scale from North and South America and from Australia; but the present condition of the market, of course, is anything but normal. So many vessels have been chartered in the past few months to carry all kinds of cargo that early available tonnage is hard to find and still harder to attract. The failure of Europe to supply herself with coal has created an immense increase in ship-miles (to use a form of speech beloved by Government spokesmen) expended to meet her needs. There is so far little, if any, slackening in the trans-Atlantic chartering of coal carriers in spite of the approach of spring; many consecutive voyages are being arranged and some of these will run right through the summer. It can hardly be expected that the pressure will be fully maintained in the warm months, but a lesson has been learned from the experience of this season and Europe will lay in stocks against the demands of next winter.

Charters for American Wheat

Meanwhile, the fixing of vessels to load grain in the United States has been held up pending release of cargoes according to the priorities which have been laid down by the American authorities. India is to come first, followed by Greece, Yugoslavia and Turkey, all of these countries being in need of immediate supplies of wheat. Presumably there will be an increase in grain chartering in the near future, directed to the countries named; it must be limited, however, by the small amount of tonnage available for loading in the United States for some time to come. The Chartering Committee, for instance, never ceases to be interested in tonnage for wheat from the Gulf of Mexico to India, but little business has resulted lately. The commissioning of a further 85 laid-up U.S. vessels to carry wheat to India may be delayed while the necessary legislation is debated, after which the manning and overhaul of the vessels will occupy a further period.

In the meantime, the amount of general business completed is less than it has been for some time, but there are many firm inquiries which are difficult to fill. Although coal is coming to Europe in great quantity, it is also moving quite actively from Rotterdam to Italy, and rates for this business have lately risen; South African cargoes of coal are more plentiful than vessels required to carry them to the Red Sea, New Zealand, Pakistan and Europe; Calcutta coal is being chartered to Australia, Japan and Italy. There is a growing shortage of tonnage in the Mediterranean and this is reflected in higher rates paid for ore, phosphate and esparto. Cuba to U.K., sugar, paid 160s., an advance of 10s., last week. The export season for sugar from Cuba and San Domingo has several months to run and will provide a steady flow of cargoes to Europe and further afield. A beginning has been made to find tonnage for the St. Lawrence wheat season by the Ministry of Food and Continental charterers.

Japan and the Far East

Movement of salt from the Mediterranean to Japan has greatly expanded this year and there are many firm orders to be filled. Japan's large programme of imports is a factor of growing importance in the freight market and will, no doubt, occupy more and more shipping to bring salt, coal, ore, sugar, wheat and soya beans from America and Europe as well as from Eastern sources. At the same time the feverish buying of secondhand ships and building of new ones by the Japanese, now permitted, is an indication that, in due course, there will be a return to the conditions of prewar days. A great deal of employment now enjoyed by shipowners of the Western countries will be theirs no more. The tension in the Far East has by no means put a stop to the great export of soya beans and bean products, as well as maize, from Manchuria and North China. This trade in full cargoes, which began on a large scale last May after a lapse of 11 years, continues to occupy much tonnage on the long voyage from Dairen and North China ports to Europe. For those owners who are prepared to overlook the political situation, the business proves highly remunerative, and recent fixtures have been arranged at up to £12 per ton if discharged in Scandinavia. Finally the time charter market, though less active than it often was last year, freely offers a cover at high rates for long or short periods. Some owners are inclined to think that they will not regret ensuring employment for many months at present rates.

The Freight Markets

Very many vessels have been chartered in the past week for coal from the United States to Europe and other destinations. Consecutive voyages have been a feature of the European demand. Typical fixtures from Hampton Roads are as follows: Antwerp or Rotterdam, four consecutive voyages at $12.35, commencing in April, and also at $11.50, commencing in May; North France, two voyages arranged at $14.50, commencing April; Genoa, Savona, Spezzia or Leghorn, three voyages at $13, option Italian Adriatic at $14.50, commencing April; Savona, one voyage at $13.75, March; Buenos Aires at $17.85, March/April; Karachi, $19, April; West Coast United Kingdom, 95s., April. Cuba sugar rates have advanced: *Dabaibe*, 5,300 tons, is fixed, Cuba to U.K. at 160s., option San Domingo, 155s., April 15/30. Cuba to Japan, sugar, has recently been fixed at $30.50, April/May. A W.R. Smith vessel is fixed for wheat from British Columbia to South Africa at 170s., July. The *Annitsa* is fixed on basis of up and down River Plate to India at 180s. heavy grain, April. The Japanese *Meiko Maru*, 7,500 tons, is chartered from North Pacific to India at $24 East, $24.50 West Coast, heavy grain, April. Australia to U.K., bulk wheat, is fixed at 140s., September 1/October 31. Dairen to Antwerp or Rotterdam has paid 200s. f.i.o. for Soya beans, etc., April/May, and a similar voyage has been arranged to Hamburg at 205s., option Gdynia at 245s. f.i.o., March/April. The *Begonia*, 6,800, was fixed last week from St. Lawrence to Antwerp at $12.40 (U.S.), May. Indications of 20s. per quarter from St. Lawrence to U.K., June, did not result in business. Esparto rates from North Africa were very firm. Algeria to Grangemouth, 1,350 tons, was done at 147s. 6d.; Sfax and/or Susa to Forth, 2,400 tons, paid 150s. Salt was chartered from Port Said or Alexandria to Japan at 145s., April. The *Graigddu*, 8,800 tons d.w., 443,000 bale feet, 10 knots on 18 tons oil, secured 47s. 6d. per ton per month, for a trip from Bristol Channel to Japan, delivery March.

Air Charter Business

The season has begun for transport of vegetables from France to the United Kingdom by air. Early produce is now quoted for shipment, but as usual there is not much profit in this short freight trade after payment of expenses at the loading and landing airports. The long voyages which are workable for carriage of ships' crews and other passengers to and from South Africa, the East, etc., offer better attraction to operators. For smaller aircraft there is expected to be plenty of valuable employment in European passenger traffic when the season is at its height.

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ECONOMIC FACTORS IN AIR TRANSPORT

AIRLINE ECONOMICS IN THEORY AND PRACTICE

By E. N. B. BENTLEY

IN SEPTEMBER 1948 an outstanding paper, entitled "Some Economic Factors in Civil Aviation," was read before the Royal Aeronautical Society by the Director-General of Long-Term Planning and Projects in the Ministry of Civil Aviation. On February 12, 1951, a paper on "Some Economic Factors in Air Transport Operations" was read before the Institute of Transport by the Chief Executive of British European Airways Corporation. It is interesting to note that the general principles and methods of air transport economics laid down by Mr. Peter Masefield as Director-General of Long-Term Planning are still those held by him as chief executive of the British European Airways Corporation. In his first lecture, Mr. Masefield was more or less in the position of a theorist propounding a thesis; today he speaks as a practising economist who has put those theories to the test. The steadily decreasing gap between expenditure and revenue of B.E.A.C. since he took over shows the soundness of his principles.

This Brancker Memorial Lecture started with an historical survey of British civil aviation, beginning with the first air mail service, that between Hendon and Windsor in 1911. There followed the first regular services to Europe in 1919, and the formation of such companies as Air Transport & Travel, Handley-Page Transport, Instone Airlines (Samuel Instone, shipowner), Daimler Airways and the British Marine Air Navigation Company. After several years' operation, culminating in severe competition from Government-subsidised foreign airlines, these companies were, in effect, amalgamated in April 1924 to form the Government-subsidised Imperial Airways, Ltd. In its sixteen years of existence, Imperial Airways built up a network of European and Empire airlines and a fine team spirit. In the 1930s private enterprise began to take part again, and the railways also showed interest in internal services. One of the most enterprising of these lines was British Airways, which was eventually combined with Imperial Airways to form the British Overseas Airways Corporation in April 1940. In August 1946, British European Airways Corporation was split off from B.O.A.C. to operate European and internal services. It was at about this time, also, that the wartime ban on civil flying was lifted and the private enterprise charter operators were allowed to resume their activities.

Traffic Operating Results

Included in this survey of British air transport is a great deal of information on the traffic and financial results. And here Masefield gives a warning against accepting cost or revenue figures over a long period at their face value. He shows that, taking the value of £1 sterling as £1 in 1920, it gradually increased to a maximum value of just over £3 in the early 1930s, after which there is a steady fall to a value of £1 again in 1950. To make a more reasonable basis of comparison, therefore, statistics of revenue and expenditure over the period 1920-50 are corrected to the equivalent in 1950 currency.

The enormous growth of British air transport in the five years since the war ended is shown by the fact that during that period two-and-a-half times as many passengers were carried for eight times as many passenger miles as were flown in the 20 years from 1919 to 1939. The postwar intensity of operation is therefore 30 times the average of the between-war operations. Another indication is given by the annual revenue of £27,000 for the year 1919-20, compared with the total revenue for the two Corporations for 1949-50, which amounted to £26,416,000. Real progress is shown by the reduction of all-in operating costs from 69.2 pence per capacity ton-mile in 1924 to 43.9 pence in 1950, in spite of the fact that present-day aircraft are much faster than those of 1924. There is even some consolation for the taxpayer in the fact that whereas the annual deficit in 1924 was about 75 per cent of the total expenditure, there has been a fluctuating but definite downward trend in the annual deficit, which now stands at about 24 per cent of the total expenditure. B.E.A.C., with lower development costs and a more uniform fleet of aircraft than B.O.A.C., shows a more rapid approach to making both ends meet. Results recently announced, but not quoted in the lecture, show an expenditure of £8,000,000 and a revenue of just over £5,000,000 at the beginning of 1949. When devaluation came in September 1949, expenditure had fallen to just under £8,000,000 and revenue increased to just over £6,000,000. Since then expenditure has risen, but revenue has risen even more, leaving a deficit of about £1,000,000 at the end of 1950.

London-Paris Route

The London-Paris route, although one of the first and one of the most intensively operated of our European services, is by no means an ideal one from the operator's point of view and until comparatively recently had always run at a loss. The distance of 215 miles is less than half the most economic stage length of 460 miles of the Vickers Viking aircraft now used. The long journey to or from the airport at each end of the route loses a lot of the time gained in the air. The average speed from city centre to city centre in 1921, with aircraft cruising at 80 m.p.h., was 53 m.p.h.; yet with cruising speeds of 260 m.p.h. the overall average speed only goes up from 53 m.p.h. to 71 m.p.h. The higher cruising speed does, however, ensure much greater regularity of service in the face of strong headwinds. The variable operating costs (i.e., those other than the overhead costs) of the Vickers Viking at 22.5 pence per capacity ton-mile show a big improvement in efficiency over the first Handley-Page airliners of 1921, which cost 60.85 pence per c.t.m.

The history of air transport is so short as to seem perhaps unimportant by comparison with the centuries of sea transport. But just as the speed of aircraft is far greater than that of transport on the surface of the sea, so has its rate of development been prodigious. Peter Masefield, like most successful men in air transport, has a real interest in and knowledge of its history. And such a knowledge is just as essential, and just as rewarding, in aviation as in any other of our activities. A study of the characteristics of the aircraft and operations of 1920, with aircraft cruising at 80 m.p.h. and an annual capacity of less than 1,000,000 ton-miles, with those of 1950, cruising at 260 m.p.h. with an annual capacity of 180 million ton-miles, should be sufficient to convince the most doubtful that there are many useful lessons to be learned from aviation's brief but high-speed history.

Basis of Cost Analysis

Turning to the future and the main theme of the lecture—economic analysis—Masefield points out that one of the confusing factors has been the lack of a clear-cut basis for cost analysis. The S.B.A.C. method (described in THE SHIPPING WORLD of March 15, 1950) and the American Air Transport Association method are both criticised because they do not take into account the circumstances of the airline concerned nor the particular route operated. As both these methods

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BREAKDOWN OF ANNUAL COSTS ON THE LONDON-PARIS ROUTE

	Viking Aircraft Costs £	*Cost Per Aircraft* £	*Percentage of Total* per cent
Basic Annual Costs			
" A " Aircraft Costs			
1. Obsolescence	7,154	7,154	4.49
2. Insurance	2,285	2,285	1.43
3. Interest on capital	1,466	1,466	0.92
" B " Airline Costs			
4. Engineering costs	10,138	10,138	6.38
5. Flying staff training (development)	1,516	1,516	0.95
6. Station administration	7,248	7,248	4.54
7. General administration	9,429	9,429	5.91
8. General overheads	4,866	4,866	3.05
" C " Promotional Costs			
9. Sales	3,980	3,980	2.50
10. Advertising	3,174	3,174	1.99
11. Commissions Payable	7,027	7,027	4.40
TOTAL BASIC ANNUAL COSTS	58,283	58,283	36.56

	£ per revenue hour	*£ per annum*	*per cent*
Variable Costs I			
" A " Aircraft Costs			
12. Flying staff pay, allowances	6.35	12,637	7.93
13. Stewards' pay, allowances	1.00	1,903	1.19
14. Flying staff training (operational)	0.13	247	0.16
15. Fuel and oil costs	9.77	18,589	11.66
16. Variable engineering labour	2.57	4,813	3.02
17. Outside contract work	3.96	7,287	4.56
18. Materials consumed	1.84	3,310	2.08
" B " Airline Costs			
19. Passengers' insurance	0.35	628	0.39
20. Cabin amenities	0.77	1,465	0.92
21. Meals on aircraft (passengers)	2.48	4,719	2.96
22. Meals on aircraft (staff)	—	—	—
23. Meals on aircraft (stewards)	—	—	—
TOTAL HOURLY CRUISING COSTS	29.22	55,598	34.87

	£ per landing	*£ per annum*	*per cent*
Variable Costs II			
" A " Aircraft Costs			
24. Landing fees	4.68	5,733	3.60
25. Outstation engineering	2.57	3,148	1.97
" B " Airline Costs			
26. Meals and accommodation (pass.)	0.06	73	0.04
27. Meals and accommodation (staff)	0.55	669	0.43
28. Meals and accommodation (stewards)	0.16	200	0.13
29. Variable station costs	29.15	35,700	22.40
TOTAL TAKE-OFF & LANDING COSTS	37.17	45,523	28.57

Total Costs	
Per aircraft per annum	£159,404
Per flying hour	£ 83.6
Per round trip	£260.1
Variable Costs	
Per aircraft per annum	£101,121
Per flying hour	£ 53.1
Per round trip	£164.9

are deliberately designed as a *uniform* basis of comparison for any transport aircraft, variables such as airline circumstances are purposely omitted, but provision is made for various stage lengths if required. The essential difference between these two methods and Masefield's is that the former attempt to assess the direct operating costs of a given aeroplane, whereas the latter covers the complete operating costs, including overhead and administrative expenses, of one particular airline. These costs can be divided under two main heads:—

(a) The Overhead Structure of the airline, which is related to the general scale of effort but not directly related to the number of hours flown.

(b) The Variable Operating Costs, which are governed directly by the amount of flying done.

To every scheduled airline operator the important period of costing comes before the event and not *ex post facto*, after the damage has been done. The maxim is, therefore: cost your operation before you fly, to be sure that it is worth flying—then check the results against the budget, to be sure that the worthwhile results are in fact achieved. The budget is divided into 29 items and a typical cost breakdown is shown in the table of operating costs for the Vickers Viking (27-passenger) aeroplane on the London-Paris route. It will be seen that the costs are summarised under three main headings—Basic Annual Costs, Total Hourly Cruising Costs, Total Take-off and Landing Costs. Each of these is sub-divided into Aircraft Costs and Airline Costs; the Basic Annual Costs also have an additional item entitled Promotional Costs. One of the most difficult problems is the allocation of overhead costs, and here Masefield departs from the more usual method of allotting them to a particular route in proportion to the capacity ton-miles or hours flown on that route. Such a method can penalise a route on which much flying is done and can disguise inefficiency on a low utilisation route. Overheads are therefore allotted to the aircraft, and not to the route, and are made proportional to the all-up weight of the aircraft. This is more logical than any other method of allocation and has the merit of working equitably in practice.

Basic Annual Costs

A careful study of the table of operating costs will reveal a great deal of useful information. The Basic Annual Costs, at 36.56 per cent of the total, are the biggest of the three groups. Engineering overheads, the largest single item in this group, includes such things as rent, rates, heating, lighting and development costs on new types of aircraft. General administration includes the salaries of head office personnel. The comparatively high cost of commission payable is due to the high proportion of tickets sold by agencies, compared with those sold direct by B.E.A.C. Among Variable Costs, by far the largest item is fuel and oil, the only other major expense being flying staff pay. The most remarkable thing about the take-off and landing costs is that they include by far the largest single item in the whole table, that of variable station costs, amounting to 22.4 per cent of the total cost of operations. It is a pity that more details are not forthcoming on this item, which is stated to include the salaries of traffic staff and handling charges at Northolt and Paris. Landing fees for the Viking, which weighs 34,000 lb., are £37.2 per landing. The actual costs for the 13,106 hours flown during the year on the London-Paris service were:—

Basic Annual Costs	£401,500
Cruising Costs	£383,000
Landing Costs	£313,600
Total	£1,098,100

Revenue earned in the year was £1,106,100, leaving a profit on that service of £8,000, which is 0.7 per cent of the turnover.

Benefits of Increased Utilisation

These statistics apply to a particular aeroplane on a particular route; but the effect of changing the aeroplane or the route can be assessed by changing the appropriate items. The most striking change is that if the stage length were increased from 215 miles to 400 miles, the annual profit would increase from £8,000 to £241,000. If the annual utilisation of the Viking was increased from 1,750 flying hours to 3,500 hours, the total operating costs per ton-mile would be reduced by 19 per cent. An increase in frequency from 11½ round trips a day to 23 trips would bring the cost down by 20 per cent. An increase in load factor from 67 per cent to 77 per cent would increase the annual profit from £8,000 to £109,600, but an average load factor much over 70 per cent means turning away passengers at peak periods and consequent loss of goodwill. Payment for mail, based on the average for out and home journeys, amounted to 40.9 pence per return capacity ton-mile, compared with the passenger rate of 51.05 pence per return c.t.m. However, since B.E.A.C. revenue from passengers is 77 per cent of the total, an increase in mail rates would not produce an outstanding difference. The forthcoming change from the Vickers Viking to the more modern 40-seater Airspeed Ambassador should give the biggest improvement of all, amounting to a potential annual profit of £265,500 on the route. This clearly emphasises the importance of matching the aircraft to the route.

This paper of Peter Masefield's is an even more valuable contribution to the business of airline economics than his previous one. It is notable not

only for a clear and thorough analysis of the subject, but also for a wealth of actual operating costs such as are more usually kept from the eyes of competitors and the public. Inevitably the subject is dealt with from the scheduled operator's point of view, which differs in several important respects from that of the charter operator, not the least being the ability to wait several years to see the gap between expenditure and revenue at last draw to a close and become a profit. Nevertheless, there is no doubt at all that this lecture is one of the finest expositions of the subject of air transport economics ever delivered, and nobody interested in the subject can fail to benefit much from what Peter Masefield has to say.

Air Freight Market

Return Cargoes Between Sweden and Britain

Although the aircharter market has been fairly quiet in recent weeks, certain sections have been extremely active. Passenger inquiries are beginning to get more numerous for summer business, partly owing to the difficulty of getting suitable aircraft and arranging for return loads from the Continent. A "minor air lift," however, has been taking place between the United Kingdom and Sweden.

The market report issued by E. A. Gibson & Co., Ltd., states that several Halifax flights have been made between Liverpool and Gothenburg with machinery cargoes, and Yorks were fixed from London to Gothenburg with spare parts for motor cars. A further three York flights were fixed from Liverpool to Gothenburg with cargoes of glass insulators. The weights carried averaged seven tons on the Halifaxes, and seven/eight tons on the Yorks. The flights with car parts were as a result of the dock strike in the Liverpool area, but the other flights were arranged before the strike started. On some occasions there were several arrivals in Gothenburg each day of either York or Halifax aircraft.

Although the flights were concentrated into a short space of time, it was possible at very short notice to fix return loads on some of them. Two of the Halifaxes on the way home called at Stavanger and picked up cargoes of up to seven tons of lobsters for Amsterdam. Two of the Yorks brought back assorted machinery cargoes from Gothenburg to London, and two more of the Yorks were fixed at short notice with cargoes of reindeer meat. "This is the first time that reindeer meat has been flown into this country. The quantities imported by air so far are only about 12 tons, and will make no appreciable impression on the meat markets here. The transport of reindeer meat from Sweden to London by sea is a very long process, as there is only one sailing a week from Gothenburg. It is brought down from Lapland by road to Gothenburg and put into cold storage. The rate by air is comparable with the sea rate, because these cargoes have been fixed as ballast loads, the main proportion of the airfreight being paid by the outward cargoes of machinery. Larger quantities of reindeer meat are to be flown into this country under the same arrangement during March. Complete carcasses of reindeer were carried, and the cargoes arrived in London in excellent condition."

De-Nationalisation of New Zealand Airlines

The New Zealand Government has taken the first step towards the de-nationalisation of airlines with the acceptance of a tender by Straights Air Freight Express, Ltd., to operate a cargo service between the North Island and the South Island, linking the two main railway systems. The New Zealand Labour Party, which was removed from office in the 1949 elections, has announced its intention—if re-elected—to purchase at cost-plus-improvement any airlines disposed of privately. The new company has a New Zealand directorate and is backed financially by Airwork, Ltd., a British firm. Up to the present, the railway authorities have operated the service between the islands, using Dakota aircraft. The new firm will use Bristol Freighters.

The winter number of *Short's Quarterly Review*, house organ of Short Bros. & Harland, Ltd., Queen's Island, Belfast, contains the second part of a paper by D. Keith-Lucas on the relative efficiencies of large landplanes and flying boats.

HELICOPTERS FOR MERCHANT SHIPS

Trials with Merchant Ships as Carriers

Helicopters may be based on merchant ships to defend convoys against submarines as a result of trials which have been carried out in the English Channel. Instead of having a light carrier with every convoy, one or more merchant ships can be fitted up with a special flight platform for helicopters. The helicopters will then take-off direct to search the sea lanes near convoys for submarines. The development of helicopters to take over this search and strike work has been forecast by Vice-Admiral M. J. Mansergh, the Fifth Sea Lord.

The trials were carried out on board the 9,788-tons fleet supply ship *Fort Duquesne*, with Westland S.51 helicopters. A specially strengthened steel platform was fitted up above the deck at the stern of the ship, clear of all rigging. The helicopter can hover over a small area and land in a space about its own size. In fact, on the *Fort Duquesne* it landed in a space of less than its own size. The rotor blades, with their span of about 50 ft., overhang parts of the flight platform. For take-off, the pilot starts up his engine and rises off the platform in the normal way. During flight he keeps in touch with the ship by radio.

When landing, the pilot brings the machine down to within about 20 ft. of the stern of the ship and hovers above the platform. He then slowly lowers it to the ground, directed by a "controller" who stands on the platform and uses two flags to guide him in. At present the deck is covered with netting to prevent the helicopter from sliding across it. When not in use, the helicopter is "anchored" to the flight platform.

Valuable lessons have been learnt in the trials. The captain of the *Fort Duquesne* took his 11-knots ship out in fair weather off Portland and also in heavy seas and high winds. It has proved possible to land a helicopter when the deck is pitching and rolling as much as 10 and 20 ft. Further trials will be carried out in rougher weather. Meanwhile all the lessons learnt in nearly 200 flights from the *Fort Duquesne* will be assimilated and passed on to other helicopter pilots training at the Naval Helicopter Station at Gosport, Hants.

The Westland S.51, powered by an Alvis Leonides engine, is the Royal Navy's standard helicopter. It is at present being used for communications work and has been landed on the large decks of aircraft carriers. Helicopters on merchant ships could also be used for communications work, and for carrying messages between ships in the convoy when radio silence was necessary. One of the *Fort Duquesne's* helicopters recently carried out a communications mission—fetching the ship's pay from the destroyer *Savage* by hovering above it and lowering a line. The civil version of the S.51 helicopter has a still-air range of 250 miles with fuel reserves for 20 minutes further flight, and can carry a load of about 1,200 lb.

Ambassadors in Production

The first production Airspeed Ambassador is now flying and will undergo de-icing trials before going into service. The second production Ambassador will probably be the flagship of British European Airways' new fleet. B.E.A. have called their new airliners *Elizabethans* and will put them into service on European routes this summer. The new aircraft, especially designed to fly B.E.A.'s high-density routes at high speed and low cost, will have normal accommodation for 47 passengers. The front four rows (18 seats) will be backward facing towards a pullman compartment in the middle. The layout can be varied from a 28-seat luxury version to a very high-density model of 49 seats. Bristol Centaurus 661 piston engines have been selected as the best power plant at present available for these very short services. Proportionately, power for power, the *Elizabethan* will be 20 miles an hour faster than its most modern competitor. It also will be less costly to operate than the planes it is replacing. On the London-Paris route, for example, it will be about 25 per cent more economical to operate than present types. For the future, a version with turboprops is contemplated.

Mr. Anson C. McKim has resigned as vice-president, traffic, for Trans-Canada Air Lines to become vice-president and director of Merck & Co., Ltd. Mr. McKim joined Trans-Canada Air Lines in July 1947.

Mr. Per M. Hansson, of Norway, has been appointed chairman of the Scandinavian Airlines System for 1951. Mr. Marcus Wallenberg, Sweden, has been elected first vice-chairman and Mr. Per Kampmann, Denmark, second vice-chairman; the new president is Mr. Per A. Norlin, of Sweden.

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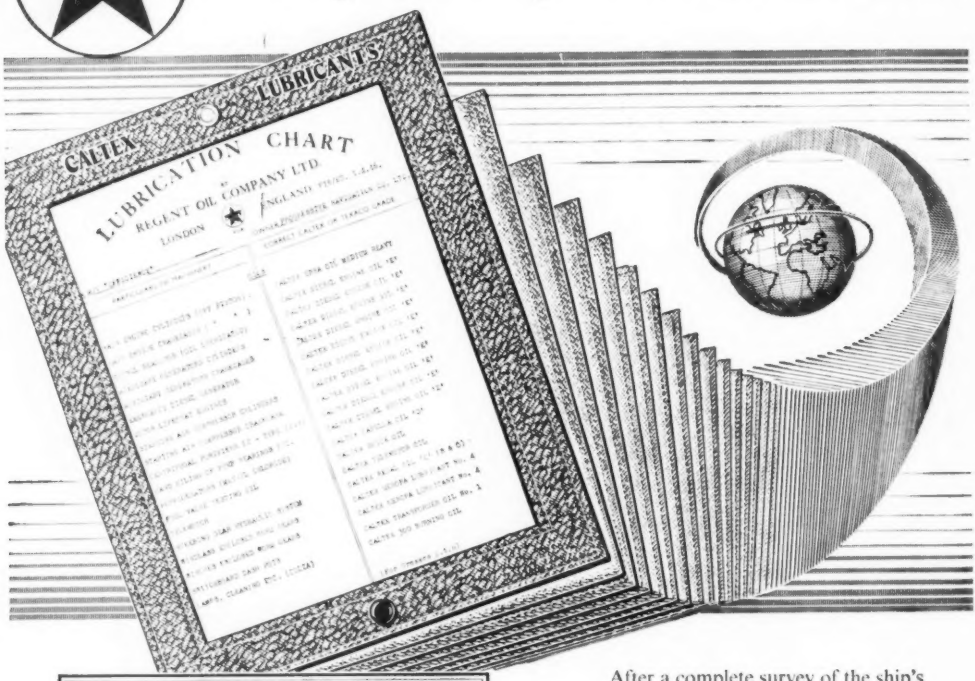

No 3 ***Lubrication charts with a copy on file at the world's principal ports***

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COAL AND OIL

THE COAL SITUATION

Although it would be foolish as yet to put forward the suggestion that the coal situation as viewed by the shipper or shipowner is improving, there are now some signs that in the coalfields the worst may be past. Among these is the fact that in the week ending on February 24, the number of men on colliery books increased by 1,000. The lowest ebb of manpower in the mines was reached last November, and since then it has increased in all by some 14,000 men. In a total of 700,000 this increase is not large, but at least it is an increase, and shows that the drift from the mines has been arrested. Productivity is also increasing slightly, and this is no doubt due in part to the improvement in the quality of labour caused by the removal of the "ring fence" round the industry, though increased mechanisation has also played its part. This improvement is illustrated by the fact that in the week ending on March 3, production of deep mined coal was 250,000 tons above that for the corresponding week last year, when there were about 5,000 more men on colliery books. The rundown of stocks is slowing up slightly, too: at the beginning of the year, distributed coal stocks were nearly two million tons below their level twelve months previously, and this gap has now been reduced to about 1,200,000 tons. This reduction, however, can hardly be put to the credit of the National Coal Board, as it is due partly to the restraint forced upon domestic consumers by the absence of coal supplies, and partly to the arrival of expensive American coal.

Suez Canal Oil Shipments

The volume of north-bound oil shipped through the Suez Canal in 1950 was 28 per cent higher than in 1949. It amounted, in November 1950, to as much as 4,358,000 tons, equivalent to over 52,000,000 tons a year, but this figure dropped to 4,039,000 tons in December, owing to the opening of Tapline. As this pipeline comes into full use, shipments from Arabia via the Canal will decline. Before the opening of the new line, they accounted for about 30 per cent of all Suez Canal oil shipments.

NORTH-BOUND SHIPMENTS

(Thousand tons)

	1948	1949	1950
Crude oil	15,055	24,187	35,043
Refined products	13,875	12,789	12,482
Total	28,930	36,976	47,525
Sources:			
Saudi Arabia	7,556	11,986	13,809
Kuwait	5,868	11,669	15,709
Persia	12,423	10,809	14,174
Others*	3,083	2,512	3,833
Destinations:			
U.K.	5,920	8,136	10,337
France	5,484	7,947	9,376
U.S.A	3,735	5,193	6,025
Others	13,791	15,700	21,787

* Mainly Bahrein, and Qatar in 1950.

Last year's increase in shipments consisted exclusively of crude oil for refining west of Suez. All the main Persian Gulf countries sent larger quantities than during the year before. Next to the U.K. and France, the U.S.A. was the main recipient of oil passing through the Canal, but her share is likely to become smaller in future, as a large part of her Middle East imports are from Saudi Arabia and will now be shipped from the Tapline terminal at Sidon, on the Lebanese coast.

New Plant Completed at Grangemouth

The completion has been announced by the Anglo-Iranian Oil Co., Ltd., of the new crude oil distillation plant at Grangemouth, Scotland. The refinery at Grangemouth is owned by Scottish Oils, Ltd., a subsidiary company of Anglo-Iranian. Before the war its capacity was 360,000 tons a year: this will have been increased to 1,800,000 tons a year by next month, when the pipeline from Loch Long through which crude oil will come to the refinery is complete. Hitherto the crude oil has been brought direct by tanker to the refinery. The depth of water in the Firth of Forth, however, is insufficient to permit modern large tankers to dock at Grangemouth, and so a site for a new discharging jetty was chosen at Finnart, in the deep waters of Loch Long. The pipeline connecting Finnart and Grangemouth is 60 miles long, and 12 inches in diameter. It is a buried line. As Loch Long opens into the Clyde, on the West Coast of Scotland, the siting of the new discharging jetty there shortens the journey that tankers have to make from the Middle East. It also has obvious strategic advantages in time of war. The first tanker has already discharged at Finnart, where the storage tanks are being filled pending the completion of the pipeline.

OFFICIAL NOTICES

New Companies

T. Couch & Son, Ltd., 31 South Street, St. Austell, Cornwall. Registered February 16. To take over business of shipbrokers carried on at St. Austell as "T. Couch & Son." Nominal capital: £3,000 in £1 shares. Directors: W. H. Harris and A. J. Tregaskes, Par, Cornwall; C. P. Couch.

Alexander Bros. (T.I. & G.), Ltd., 25 Queen Street, Newcastle-on-Tyne. Registered February 15. To take over business of shipowners, brokers and coal exporters carried on at Newcastle-on-Tyne by Alexander Bros. (T.I. & G.), Ltd. Nominal capital: £5,000 in £1 shares. Permanent directors: G. Alexander, Black Hall, Hexham, Northumberland; F. A. Urwin, Inellan, Lyndhurst Gr., Gateshead, Co. Durham; W. L. Irving, N. Inglis and W. W. Wallace.

[Information from *Jordan's Daily Register of New Companies*]

Gruno Shipping, Ltd. Registered in Dublin February 2. Capital: £1,000 in £1 shares. Subscribers (each with one share): Jan de Vries, South Hill, Killiney Road, Killiney, Co. Dublin (shipbroker); and Michael Sugrue, 12 Peter's Place, Adelaide Road, Dublin (accountant). Directors: Marien Knevel, Jan de Vries and Edward J. Counihan.

Overseas Company

Sjoforsikrings-Aktieselskabet Alpha ("Alpha" Marine Insurance Co., Ltd.).—Particulars filed February 21, 1951, pursuant to Section 407 of the Companies Act, 1948. Capital: Kr.1,000,000 in 50 "A" and 950 "B" shares of Kr.1,000 each. Registered in Norway on December 20, 1906, to carry on general maritime and transport insurance, etc. British address: 24 Lime Street, London, E.C.3, where R. W. Gibbon & Son, Ltd., are authorised to accept service of process and notices. Directors: Olav Just, Flekkefjord, Norway; Nerdrum Odd, Tonsberg, Norway; and Hansson Wladimir, Oslo, Norway.

Increases of Capital

Johnson Bretland, Ltd., ship and insurance brokers, etc., 59/61 Gt. Nelson Street, Liverpool.—Increased by £4,300, in £1 shares, beyond the registered capital of £1,200.

Lep Transport, Ltd., 16/22 Shelton Street, London, W.C.2.—Increased by £240,000, in £1 ordinary shares, beyond the registered capital of £60,000.

Production of crude oil in Iran during December last amounted to 2,945,000 tons. Provisional figures for the year total 31,750,000 tons.

The largest buoy to be constructed in Scotland has been completed by Marshall & Anderson, Ltd., of Motherwell. It is the first of three for use in the Suez Canal, and weighs 14 tons.

Weekend cruises will be made again this year by the British Railways' steamer *Falaise*. Six cruises will be made in all, the first being over the Whitsun weekend, beginning on May 11. The programme includes trips to Havre, Jersey, Guernsey, St. Malo, Cherbourg and Rouen.

New Thames Oil Jetty

Designed for Tankers of 38,000 Tons Deadweight

Work is at present in progress on the construction in the Thames estuary of a new oil jetty, which when completed in about a year's time will serve the new Shell Haven refinery of the Shell group. This refinery adjoins the premises of London & Thames Haven Oil Wharves, Ltd., which firm is providing the jetty facilities and much of the storage capacity needed by the new refinery. The jetty will be able to accommodate oil tankers of up to 38,000 tons deadweight, which is about 7,000 tons more than the deadweight of the largest tanker in service at present. It is being built by John Mowlem & Co., Ltd., the marine and engineering consultants being Thomas C. Rolland and L. G. Mouchel & Partners. The jetty, which will cost £300,000, is the first to be built by a method of construction involving the use of pre-stressed concrete beams and spans. It will be L-shaped, with an approach section 414 ft. long and 23 ft. wide, and a head section 240 ft. long and 40 ft. wide. It is supported on concrete cylinders, 8 ft. in diameter, sunk into the river bed to a depth of 34 ft. and then filled with concrete. The spans consist of I-beams cast in concrete, and pre-stressed by means of cables threaded through each span. The decking throughout the jetty consists of concrete slabs.

Another novel feature of the jetty is its fenders, which are the first of their type to be installed. In principle they are similar to the fenders used by Shell at Mena-al-Ahmadi and at Heysham, based on a patent by Professor A. L. L. Baker, but their design is different. They were designed by L. G. Mouchel & Partners in conjunction with Thomas C. Rolland and Port & Harbour Fenders, Ltd., and consist basically of horizontal cylinders, suspended beneath the jetty. When a ship presses on the fender the cylinder swings inwards and upwards, and its weight exerts a restoring force. There are six fenders in all, each capable of absorbing 270 foot-tons of energy. In addition to bollards on the jetty, the mooring arrangements consist of mooring posts up and downstream from the jetty head, and ground moorings to take the head and stern ropes. The latter consist of screw piles carrying 3-in. cast steel bridles and mooring chains, terminating in buoys. Samson posts with double derricks and electric winches will be provided on the jetty for handling the suction hoses.

Shipbuilding in East Germany

Shipyard and Port Expansion Planned

The five-year plan of the Soviet-occupied zone of Germany includes the building of a merchant fleet. According to the latest reports, however, the launching of the first ship is not expected before 1953. At the Warnow yards in Rostock-Warnemünde, a 6,000-tons cargo vessel is expected to leave the slips in that year. In 1954, in addition to another 6,000-tonner, a vessel of 9,000 tons is to be launched which will then be the largest vessel of the "planned" 350,000 tons gross merchant fleet of the Soviet zone of Germany. Government "Shipbuilding Commissions" have developed four types of vessel, mainly of between 1,500 and 2,000 tons gross. A special type has been developed for the China service. At present the East Zone has only three old freighters in service. These 1,500-tonners are engaged principally between the East Zone ports of Rostock and Stralsund and the Baltic ports of Leningrad and Libau. The first East Zone freighter, the *Vorwärts*, sailed in December, 1950, with reparation goods to Soviet Latvia.

Shipyard construction in the Eastern Zone has recently been intensified. In particular the Warnow yards at Warnemünde, the repair yards in Wismar, the "Volks" yard in Stralsund, the "Peene" yard in Wolgast and above all the "Neptune" yards of the Soviet A.G. in Rostock, have been appreciably enlarged. There are some 26,500 workers engaged in the yards of the German East Zone. The Warnow and Wismar yards are each to have two additional berths, to which, according to information, two more berths are to be added by 1955. For the Warnemünde yard, a dry dock of medium size is also contemplated. The floating dock planned for the Wismar yard will be solely for repair work.

In the two ports of Wismar and Rostock/Warnemünde, which will later be provided with floating cranes of up to 100 tons capacity, extensive dredging work is at present being carried on to give a depth of water of 9 metres. Port extensions are being carried out at the same time. The maximum transhipment capacity of the largest port, Rostock, is to be increased to 5,000,000 tons a year. The capacity of Stralsund and Wismar is also to be increased by 15 per cent within the next few years. The total capacity of the East Zone ports amounted to 3.6 million tons in 1950.

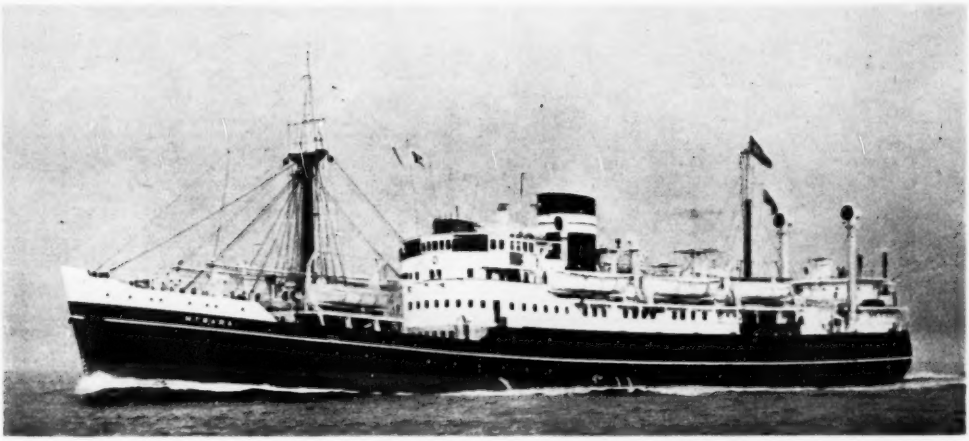
Framework of the new Thames oil jetty under construction at Thames Haven

Belfast Harbour Commissioners

The annual report of the Belfast Harbour Commissioners states that the net register tonnage of vessels cleared at the port during 1950 was 4,836,246 tons, an increase of 379,706 tons on 1949 and the highest in the history of the port. The tonnage of goods imported and exported also constitutes a record at 4,682,025 tons, compared with 4,444,095 tons the previous year. Good progress is being made with the work of providing a new reinforced concrete frontage to Queen's Quay for a length of 1,250 ft. from the north end with a uniform depth of 20 ft. at low water alongside. Part of the new quay, amounting to 800 ft., is already in use and three new 5-tons level luffing travelling electric grabbing cranes have been installed and are operating satisfactorily. A contract has been placed for the reconstruction of the Musgrave shipyard delivery wharf which would increase the depth below harbour datum to 21 ft. 3 in. instead of the present depth of 15 ft. 3 in.

New Wage Agreement for Swedish Seamen

A wage agreement, providing increases for 14,000 men, has been reached between the Swedish Seamen's Union and the Swedish Shipowners' Association. Benefits gained by the seamen include pay increases of between 15 and 17 per cent, increased sickness benefits, vacation allowances and service increments. The agreement also contains a clause for a supplementary monthly allowance of Kr.60 after ten years' service with the same shipping company. Other improvements include free bunk equipment in all ships of over 3,000 tons d.w., and in all other vessels where storage space admits for this arrangement, while those seamen not benefiting will receive a special allowance for their own equipment. Extended off-duty time for cooks and galley hands is another improvement. A similar agreement has been concluded by the Swedish Stewards' Union.



PASSENGER & CARGO MOTORSHIP "MTWARA"

TWIN-SCREW VESSEL FOR THE B.I. AFRICAN AND INDIAN SERVICES

A RECENT addition to the fleet of the British India Steam Navigation Co., Ltd., is the twin-screw passenger and cargo motorship *Mtwara*, which has been constructed by Henry Robb, Ltd., Leith, for the owners' East African and Indian services. Designed to the requirements of Lloyd's Register of Shipping classification 100 A.1, the *Mtwara* has been constructed in accordance with her builders' practice in electric welding, the steel structural work having been erected in prefabricated components which include the whole of the double bottom, fuel tanks, main and auxiliary engine seatings, bulkheads, casings, and numerous other units. An item of interest is the bossing for the twin shafts at the after end of the ship, which were prefabricated and welded before being built into the main hull structure. The propellers were manufactured by J. Stone & Co., Ltd., Deptford.

The principal particulars of the *Mtwara* are as follows:—

Length o.a.	298 ft.
Length b.p.	280 ft.
Breadth moulded	46 ft.
Depth moulded to upper deck	19 ft. 6 in.
Tweendeck heights:	
Forecastle	7 ft. 6 in.
Upper deck to bridge deck	8 ft.
Bridge deck to boat deck	8 ft.
Gross tonnage	2,629
Net tonnage	1,366
Load draught	16 ft.
Corresponding deadweight tonnage	1,815
Passengers:	
First-class	26
Second-class	40
Deck (at 10 sq. ft. per passenger)	350
Cargo capacity (bale)	85,643 cu. ft.
Fuel oil, tons	421.5
Total b.h.p.	4,000
Corresponding r.p.m.	250
Speed, fully laden	15 knots

There are two holds in the fore part of the ship, and one aft. Deep tanks for fuel oil are interposed between the engine room and the after end of No. 2 hold. In the tweendecks immediately abaft the machinery space and also in the fore part of No. 3 hold are a group of insulated compartments, three of which are available for cargo while the remainder are devoted to the carriage of perishable stores. The total capacity of the insulated space is 3,761 cu. ft., of which 1,892 cu. ft. is allocated to cargo. The refrigerating machinery is installed in the space between the shafts just abaft the engine room.

The capacities of the cargo holds and tweendecks are as follows:—

Compartment	Capacity in cu. ft. (bale)
No. 1 hold	13,307
No. 1 tweendecks	10,112
Magazines (2)	1,850
No. 2 hold	19,482
No. 2 tweendecks	16,699
No. 3 hold	24,193
Refrigerated cargo	1,892
Mail room	1,060
Specie room	390
Total	88,985

The cellular double bottom, which is of increased depth in way of the machinery space, is used for the carriage of fresh water, water ballast, fuel oil and lubricating oil. The fore and aft peaks are arranged for the carriage of fresh water or water ballast, and deep tanks are provided for fuel oil immediately forward of the engine room. The spaces at the sides of the shaft tunnels immediately abaft the engine room have been utilised for additional fresh water capacity. A total of 468 tons of fresh water can be carried.

The bridge tweendecks provide accommodation for second-class passengers amidships, and for petty officers, stewards, seamen and firemen towards the after end. The first-class dining saloon is arranged at the forward end of this bridge space, with the second-class dining saloon and galleys further aft. A working passageway provides direct access from the galleys to the first-class saloon pantry. the forward tweendeck spaces over No. 1 and 2 holds are available for either deck passengers or cargo. A deckhouse is built on the upper deck round the foremast in which the galleys are placed for the unberthed passengers, and this also forms the entrance to the tweendeck spaces below. Washplaces for these passengers are provided in the forecastle.

Officers' and Passengers' Accommodation

The house on the bridge deck contains accommodation for the first-class passengers. At the forward end an attractive lounge extends the full width of the house, and abaft this is the vestibule from which a main staircase leads down to the first-class dining saloon on the deck below. At the after end of this deckhouse a second-class lounge is provided, with the main staircase for second-class passengers down to their accommodation and dining saloon on the deck below. Another independent deckhouse is built on the poop deck to provide galleys, messing and washplace accommodation for the native crew.

At a higher level, on the boat deck, the forward house provides accommodation for the deck officers, and includes a radio room, ship's office and emergency generator compartment. Abaft the engineroom skylight the deckhouse is extended to the after end of the boat deck and contains the engineer officers' accommodation, the chief engineer having a day room and bathroom independent from the engineers' bathroom. There is also an engineers' office. The captain's suite is on the navigating bridge. A hospital with male and female wards and dispensary are situated in an isolated house at the after end of the vessel.

In view of the tropical service for which the ship has been designed, extensive protection against the sun is provided by permanent or portable portions of sun deck over the accommodation, and double canvas awnings elsewhere.

The interior decoration of the living spaces throughout the ship, including the public rooms and the captain's and officers' quarters as well as the crew's accommodation, has been carried out by the shipbuilders' joinery department. Much of the veneer panelling has been supplied by William

First-class dining saloon

Mallinson & Sons, Ltd., London, which firm has also provided quantities of hard wood employed in the construction of the furnishings. The carpets, upholstery and soft furnishings generally, throughout the ship, have been provided by Rowan & Boden, Ltd., Glasgow, and have been selected with due regard to the tropical climate in which the vessel will operate.

In the first-class dining saloon, the mural treatment consists of silver betula panelling with English walnut facings (pilasters, door and rectangular window frames, etc.). The furniture, which has been supplied by Rowan & Boden, Ltd., is in English walnut. The lounge is panelled out in stripey white ash with English walnut trimming. Comfortable settees and easy chairs are provided, and also facilities for writing. The vestibule is panelled in white sycamore veneer, to form a contrast to the glare of the sun outside. The partition between the vestibule and lounge is lightened with small glass panels above dado height. In the doors there are also full height glass panels.

The second-class accommodation is all arranged in large four-berth cabins, with a separate wardrobe for each person and a washbasin in each cabin. The equipment has been provided to meet special requirements of the Eastern coastal passenger trade. In the dining saloon and lounge the walls and ceilings are finished in off-white enamel while the furniture and woodwork generally are in polished hard wood.

All living spaces are mechanically ventilated, the installation having been designed and fitted by Thermotank, Ltd., Glasgow. In the passengers' staterooms and officers' accommodation Thermotank louvres give the occupants individual control of the air supply. The Thermotank system also carries out the ventilation, by means of punkah louvres, in the first- and second-class public rooms. Independent heating arrangements by means of electric radiators are provided to meet Ministry of Transport regulations for the voyage out East; these will not normally be needed in the service for which the vessel has been designed. The spaces allocated to unberthed passengers below deck are also ventilated by means of the punkah louvre system at ceiling height.

First-class lounge

There are five galleys in the ship, comprising a large European galley amidships, two unberthed passengers' galleys forward and two galleys aft for the crew. The cooking equipment throughout has been supplied by the Carron Company, of Falkirk. The appliances in the European galley include an oil-fired two oven range, steam-heated baking oven, steam-heated hot water boiler, steam-jacketed soup boiler, charcoal grille and set of two wet steam ovens complete with all fittings. The galley is fitted with a stainless steel sink, dressers, etc. Pantries are arranged in convenient proximity to the first- and second-class dining saloons on the same deck as the galley. "Sternette" refrigerators are included in the pantry equipment.

The outfit of anchors and cables has been provided by Samuel Taylor & Sons (Brierley Hill), Ltd., of Brierley Hill, Staffs., the cables being of their Tayco pattern. The bollards throughout the ship follow the owners' usual practice, i.e., they are not cast in pairs, but independently; the rivet holes are pitched uniformly round the base, so that the bollards can be rotated into a new position and the chafe of the mooring ropes taken in another location. The windlass has been provided by Clarke, Chapman & Co., Ltd., while the electro-hydraulic steering gear has been manufactured by Brown Brothers & Co., Ltd.

The three cargo hatchways on the weather deck are all fitted with T. & B. rolling beams, and are served by a comprehensive outfit of derricks operated by six electric winches supplied by Clarke, Chapman & Co., Ltd. The two refrigerating machines, installed in the space between the shaft tunnels, have been manufactured by J. & E. Hall, Ltd., and are designed for the use of Arcton gas as the refrigerant.

Floor Coverings

The internal floor coverings were supplied by Semtex, Ltd., and consist of Semtex cork-filled latex underlay with decorative linoleum superimposed in marble colours in the first-class lounge, vestibule and dining saloon and adjacent passageways. Semtex covering was also laid throughout the accommodation, with decorative linoleum in marble colours superimposed in the first-class staterooms and in the second-class dining saloon and lounge. Elsewhere in the second-class accommodation, officers', engineers' and crew's quarters plain but best quality linoleum is fitted over the Semtex covering.

All eight boats, including one diesel propelled, are of steel construction and have been manufactured by Hugh McLean & Sons, Ltd., Renfrew. For handling the boats, eight sets of Columbus Crescent-type davits, manufactured by Samuel Taylor & Sons (Brierley Hill), Ltd., are provided. The davits are equipped with mechanical hoisting and lowering gear, and the boat falls are of steel wire. Two portable electric winches—one each side of the boat deck—are provided to facilitate the recovery of the boats, as an alternative to the use of manual power.

The cargo spaces, storerooms and similar unfrequented parts of the vessel are protected against fire by a combined smoke-detecting and fire-extinguishing installation on the Kidde-Rich system developed by the Walter Kidde Co., Ltd. A watertight door is fitted in the bulkhead which separates the engine room and the shaft space, and a further door is provided in a transverse division in the shaft space itself. These doors, which have been provided by the Westmoor Engine Works Co., Ltd., of Sunderland, are of the horizontal-sliding, rack-operated type, the sliding surfaces being faced with brass. The doors are operated from the upper deck, via gearing supplied by the Westmoor Company.

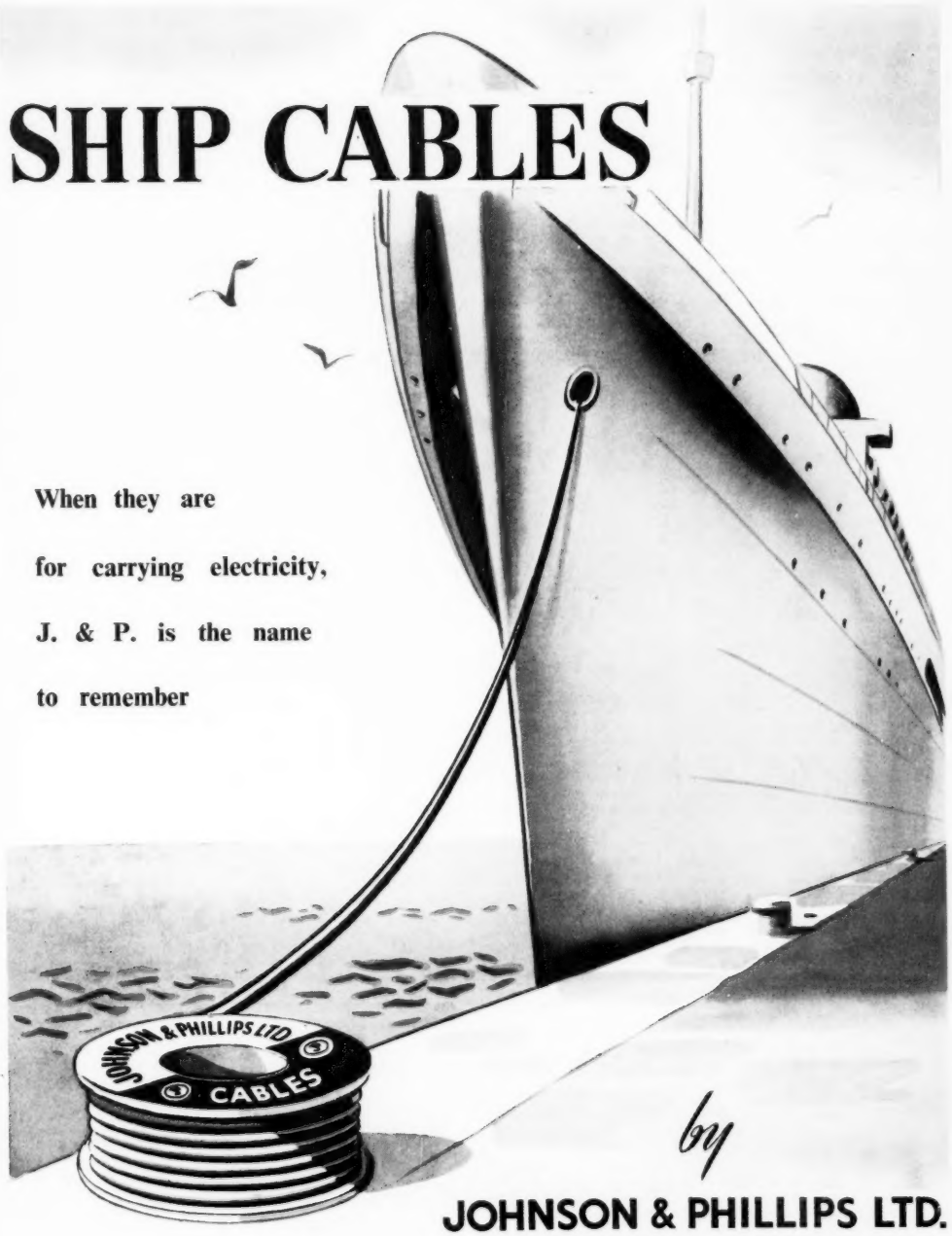
Navigating Equipment

The magnetic standard and steering compasses have been supplied by Kelvin & Hughes (Marine), Ltd. A "Circlesign" navigation-lights indicator, a Circlesign installation to show that the propellers are clear, and a "Loudaphone" loudspeaking telephone system have been provided by Clifford & Snell, Ltd., and a "clear-view" screen by George Kent, Ltd., of Luton. The ship carries a Walker Trident electric log. The communication equipment comprises a Marconi "Reliance" transmitter and "Mercury" and "Electra" receivers, and Marconi aids to navigation include a "Lodestone" direction finder, "Seavisa" echometer, and "Radiolocator" radar. "Vigilant" auto-alarm apparatus is installed, and an "Oceanic" sound-reproducing system.

Propelling and Auxiliary Machinery

The propelling installation comprises two Kincaid-Polar marine diesel engines constructed by John G. Kincaid & Co., Ltd., of Greenock. The engines are of the direct-reversible two-stroke single-acting type, with direct injection of fuel.

SHIP CABLES



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First-class stateroom in the "Mtwara"

each having five cylinders, developing 4,000 b.h.p. collectively at 250 r.p.m. The principal auxiliaries installed in the engine room are three 150-kW. British Polar marine auxiliary sets of K54E type, developing 230 b.h.p. at 600 r.p.m., direct coupled to Laurence, Scott & Electromotors generators. The emergency generating set consists of one 15 kW. Russell Newbery marine auxiliary set directly coupled to a Laurence, Scott & Electromotors generator. The ship's electrical supply is at 220 volts D.C.

Other Equipment

To protect the lubricating oil, freshwater and salt-water circuits, Monitor alarms of the type developed by Monitor Patent Safety Devices, Ltd., of Wallsend, are fitted. The heat exchangers incorporated in the freshwater cooling systems have been provided by Serck Radiators, Ltd., and are designed to effect the necessary cooling with a sea-water temperature of 90 deg. F. Steam required for a variety of services is provided by a vertical oil-fired boiler, manufactured by Cochran & Co. (Annan), Ltd. The associated feed pump—a steam driven unit—has been provided by G. & J. Weir, Ltd., and this firm has also supplied the evaporator and distilling condenser, together with the associated circulation pump and condenser. Among the other engineroom subcontractors are Reavell & Co., Ltd. (air compressors), Drysdale & Co., Ltd. (pumps), and Alfa Laval & Co., Ltd. (purifiers).

SHALLOW-DRAUGHT RIVER GUNBOAT FOR PERU

First of Two for River Amazon Service

THE shallow-draught river gunboat *Ucayali* was launched last week from the Woolston yard of John I. Thornycroft & Co., Ltd., Southampton, by the wife of the Peruvian Ambassador, as proxy for the wife of the President of Peru. The vessel is the first two under construction at the yard for the Peruvian Navy, for service on the upper reaches of the River Amazon and its tributaries. The second vessel, to be named *Maranon*, is building on the same berth as the *Ucayali*, and both vessels, on completion in about July, will sail to their destination under their own power.

The *Ucayali* has a displacement of about 350 tons, on a waterline length of 154 ft. 9 in., and a beam of 32 ft. The shallow maximum draught of only 4 ft. is achieved mainly by the use of aluminium alloy for practically the entire superstructure. A service speed of 12 knots is expected from two British Polar diesels, developing 400 b.h.p. each and driving twin screws. Commander J. Barreto, of the Peruvian Navy, told a representative of THE SHIPPING WORLD after the launch that the tank capacity of the *Ucayali* was sufficient to give a cruising range of 5,000 miles without refuelling. The accommodation, which is mechanically ventilated throughout in view of the tropical conditions in which the vessels will work, includes a cabin and dayroom for the commanding officer, three cabins for officers, and a large wardroom. Separate messrooms and sleeping accommodation are arranged for six P.O.'s and 30 ratings. Sir John Thornycroft, speaking after the launch, said that this was the first warship to be built in Great Britain for a foreign power since the war, and he hoped that further orders for larger craft would follow.

ROUND THE SHIPYARDS

Work in Progress in Scotland

By THE SHIPPING WORLD'S Own Correspondent

FEBRUARY and early March saw Clyde and other Scottish yards embarked on a fairly active launching programme. Up till then emphasis had been on the inflow of new orders. Welcome as these are, the essential function of the yards is to build and launch, to clear the way for the next keel. Under present conditions that need is more urgent than ever—the more so since costs are showing a habit of climbing. Speaking broadly, therefore, the later the construction, the greater danger of higher cost.

This aspect of cost was emphasised by a Norwegian buyer, Mr. Peder Melsom, at the launching of the *Polarbris* from Barclay, Curle & Co., Ltd. Before the war the *Polartank*, from the same yard, cost £148,000. The *Polarbris* cost about £800,000. There can be no more apt comment on the present situation. The *Polarbris* was of particular interest because she will have the largest opposed-piston airless injection engine built so far in Britain. On the same day, Lithgows, Ltd., launched the *Dalmore*, a 15,000-tons deadweight tanker, for the United Steam Navigation Co., Ltd. John Brown & Co., Ltd., had the train ferry *Norfolk Ferry* launched in early March for the Railway Executive. Alexander Hall contributed the *St. Ola*, a motor passenger and cargo vessel for the North of Scotland, Orkney and Shetlands run, replacing an older vessel of the same name. The 9,600-tons deadweight *Lylepark*, a cargo motorship for Denholm Line Steamers, Ltd., of Glasgow, was launched by Charles Connell & Co., Ltd.

Problem of Steel Supplies

So much for launchings. The spate of new business to Scottish yards and to the Clyde in particular has been fully publicised. Tankers form a major part of the business and are likely to be supplemented by still further orders if Clyde forecasts are accurate. What is more important than these orders must be the capacity to execute them. In theory the yards are working smoothly and in good heart. In practice there have already been indications in Scotland that production of steel may drop considerably, unless the supply of scrap is stepped up to permit full-pressure working. The competition of the rearmament programme must also have its inevitable effect on shipbuilding, important as tankers and troopers may become. On top of all this the nationalisation of the steel industry should have begun to demonstrate its effect within a matter of months. It is, perhaps, understandable that buyers should be securing their position as fully as they can now, to avoid possible shortages later.

On the labour front the present trends are again creating all the conditions which encourage poor work and high labour turnover. In the later part of 1949 the yards were successfully completing a gradual "vetting" of all their labour. Most had initiated excellent training schemes for apprentices—schemes which still continue. Yards were being stripped down to something like working efficiency. Men knew that they had to be worthwhile to hold their jobs. The present boom and the secure knowledge of two to three years' work is not necessarily a reason for assumption that all shipbuilding workers will use it to their own advantage. Most have shown a definite appreciation that their own prosperity is bound up with that of their firms. But it would be strange were there not some who definitely will use the situation to create difficulties. In addition, competitive bidding for labour by other industries must attract some shipyard workers away. Oil refineries have been particularly prominent in this connection, taking welders and pipeworkers. Big money, travel and new work attract quite a lot of the younger men, and their going leaves squads short.

THE WERKSPOOR-LUGT TWO-CYCLE ENGINE

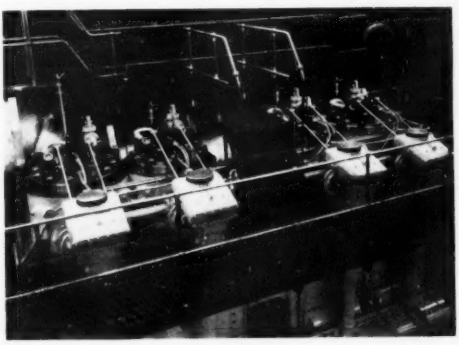
FOUR-CYLINDER ENGINE OF NEW DESIGN TO OPERATE ON BOILER FUEL

The first Werkspoor-Lugt two-cycle oil engine has now completed successful shop tests in the works of Werkspoor N.V., Amsterdam, as reported in The Shipping World of February 7. Designed by the late Mr. G. L. Lugt, chief diesel engineer to Werkspoor when the works was occupied by the Germans, this engine incorporates a number of special features, which include the elimination of the camshaft and the adoption of through scavenging with four exhaust valves per cylinder, the valves being operated from a vertical lever. Further information has now come to hand on the design and construction of this engine, which is of the single-acting, two-stroke crosshead type with a cylinder diameter of 600 mm. and a stroke of 900 mm. The engine develops 1,800 b.h.p. at 165 r.p.m. without supercharging, and incorporates scavenging on the uniflow principle with a single row of scavenging ports in the separate lower liner. The engine is designed for running on boiler fuel with a viscosity of 3,500 secs. Red. I at 100 deg. F., two De Laval separators, one of which is designed as a purifier and the other as a clarifier, having been supplied for this purpose. The fuel consumption is given as 160 grams per b.h.p./hr. at full load, the specific lubricating oil consumption being 0.33 gram per b.h.p./hr. It is intended that this engine will be installed in the 2,800-tons d.w. cargo vessel *Prins Frederik Willem*, which was launched on February 20 at the De Merwede shipyard, Hardinxveld, for the Oranje Line, Rotterdam.

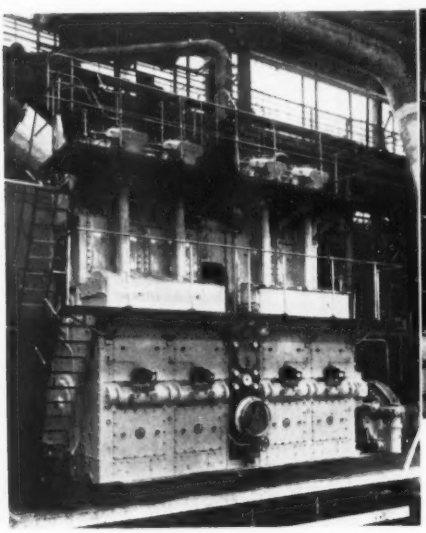
The engine is of the full crosshead type, the piston rod passing through a stuffing box between the scavenging air receiver and the crankcase. The low crosshead design as used for the experimental engine has been discarded, apparently to prevent contamination of the lubricating oil by boiler fuel oil or deposits. The bedplate carries short cast-iron columns, which support the scavenging pump beams, in which the guide cylinders for the crossheads are placed. The scavenging pump beams also contain the scavenging air receiver, which continues upwards round the scavenge port liner. Detachable covers are fitted at the front and back of the receiver. It should be mentioned that the crosshead guide cylinders are of a diameter equal to that of the combustion cylinders.

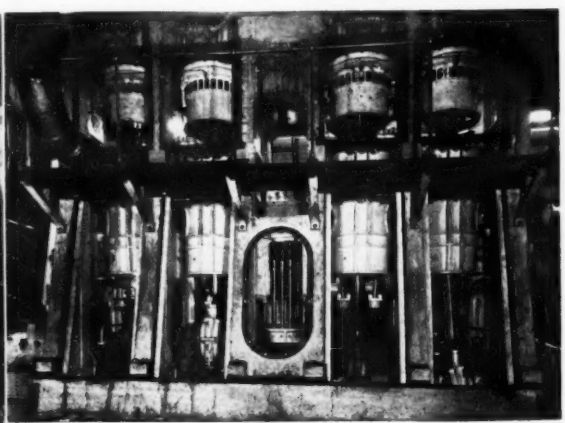
Half-Cylindrical Guide Shoes

The steel crosshead and the piston rod are in one piece, the crosshead carrying two half-cylindrical shoes of cast steel lined with white metal. These shoes are adjustable for diametrical clearance within the guide cylinder. This crosshead carries at the bottom the ring to which are connected the links and levers driving the scavenging pump. The links and levers are connected by spherical articulations and have bores for the inlet and outlet of the cooling oil for the piston and the shoes, and for the lubricating oil for the crosshead bearings and the bottom-end bearing. The connecting rod is specially bored for this purpose. Careful attention has been paid to the arrangements for maintenance and inspection and the engine has been specially designed so that all moving parts and the



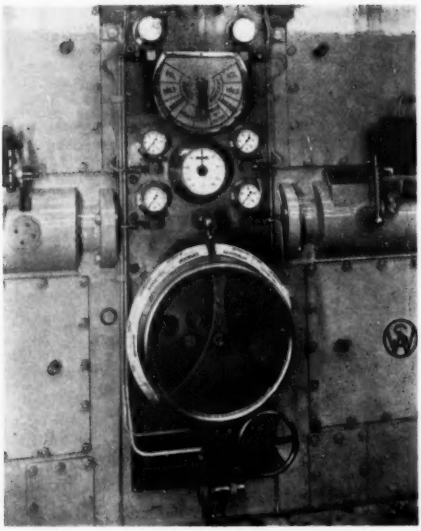
Cylinder heads and exhaust valve operating gear





Above : **The back of the Werkspoor-Lugt two-cycle engine opened for inspection. The cylindrical crosshead guides can be seen, and the fuel pump rods in the centre, which are driven from the crankshaft**

Left : **The 4-cyl. single-acting two-stroke Werkspoor-Lugt engine**



Control panel, showing single handwheel for manoeuvring, starting and fuel regulation

guide cylinder can easily be withdrawn. The forged steel piston rod can be withdrawn through the side without disconnecting the piston rod.

The scavenging piston rod is extended upwards for the drive of the exhaust valve gear located at the side of the cylinder head. The four exhaust valves are arranged in a single cast-iron valve house placed in the cylinder head. This valve house also contains the centrally placed fuel injection valve, the starting air valve and the safety valve with decompression valve for manœuvring. It is interesting to note that the design of this two-cycle engine has been carried to what many must feel is the logical conclusion—there is no camshaft. The special cast-iron cylinder liner is fastened to the cylinder head, the two parts forming one piece for assembling in the beam. The lower liner, which is in two halves and contains the scavenging ports, can easily be dismantled for the inspection and replacement of the piston rings. Heavy studs secure the cast iron cylinder heads to the beam, these studs being screwed into the underside of the head with the nuts on the underside of the beam. This arrangement ensures that the exhaust passage in the head is kept free from obstructions.

Half Built-Up Crankshaft

The crankshaft is half built up and is of rigid design. The distance between the cylinder centres is 1.55 times the cylinder diameter, except in the middle of the engine where the crankshaft carries the cams for the fuel pumps. The thrust block is incorporated. There is one fuel pump for each cylinder, the pumps being built together in one block, as already mentioned, at the middle of the engine right above the crankshaft. Four cams on the centre of the crankshaft operate the vertical plungers of the pumps. For running astern, the fuel pump plungers are turned from the ahead to the astern position, by which operation the connections from the pumps to the cylinder injectors are interchanged. Manœuvring is effected from a single handwheel which is connected to the engineroom telegraph. This handwheel also serves for starting and fuel regulation. The manœuvring gear is located in the centre of the engine on the port side and it is understood that manœuvring from full ahead to full astern takes less than four seconds.

RECENT TECHNICAL DEVELOPMENTS

New Types of Grinding Machine

Pedestal mounted grinding machines are now being marketed by Chamberlain Industries, Ltd., of Staffa Road, Leyton, London, E.10. The characteristic toughness of the aluminium oxide abrasive wheels makes the machines particularly suitable for grinding materials of high tensile strength. The totally enclosed body is fabricated entirely from mild steel plate and the maximum strength is obtained by the addition of bracing, where necessary, to eliminate vibration. The machines are produced in three sizes—10 in. by 1 in., 16 in. by 2 in., and 24 in. by 3 in. The 24 in. by 3 in. heavy duty model has a fabricated mild steel enclosure housing the motor, belt starter and wiring. The drive consists of three-speed multi-vee pulleys for changeover at 16-in. and 20-in. wheel diameters, incorporating a foolproof safety device to prevent wheels being overrun. The squirrel-cage screen-protected 6 h.p., 1,500 r.p.m. synchronous speed motor, unless otherwise stated, is wound for an A.C. supply of 400/440 volts. Three independent speeds are provided for each wheel by means of coned pulleys.

The "Hurseal" radiator developed for marine use

New Radiator for Marine Use

A new development in "Hurseal" radiators is the oil-filled, hermetically sealed electrically heated radiator for marine use. These radiators can equally well be applied to industrial use and, while the construction is basically the same as the domestic Hurseal radiators, they have in addition, an air and watertight connector box which encloses a thermal cut-out and condenser for D.C. working. The radiators are made principally for bulkhead fixing and their main object is to afford additional comfort for officers' and crew's quarters. At the moment they are being installed in cargo vessels of 5,000 and 10,000 tons, but they can, of course, be used in all ships. They are manufactured by Hurseal, Ltd., 229 Regent Street, London, W.1.

V.H.F. Radio for Air-Sea Rescue Service

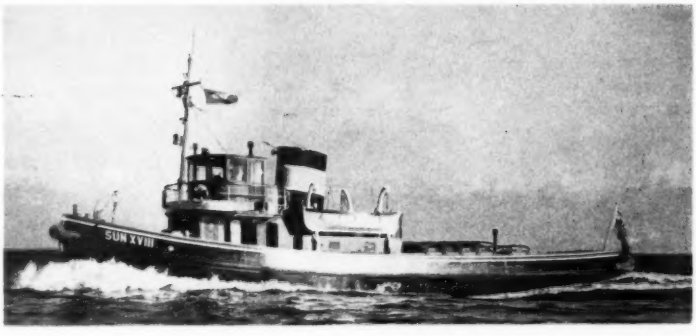
The radio-telephone communication scheme operated by the St. John Ambulance Brigade, Guernsey, for the control of ambulances was introduced in 1947 and was the first of its kind in the British Isles. Now this scheme has been extended to cover the seas and coasts of the Channel Islands, which are among the most dangerous round Britain. Rescue work in the area calls for the use of high-speed launches and the installation of a two-way V.H.F. radio system in these vessels has made the lifesaving service even more effective than in the past. Two types of G.E.C. equipment were used in the official inauguration test, a 12-volts battery-operated 15/20 watt transmitter/receiver identical with those already used in land ambulances, and a new form of equipment, a 0.25-watts "walkie-talkie" transmitter/receiver carried on the back of the operator. The launch in which the system was tested cruised in the vicinity of Guernsey and reliable contact was maintained between the headquarters station at Rohais and the launch on the far side of the islands of Herm and Sark.

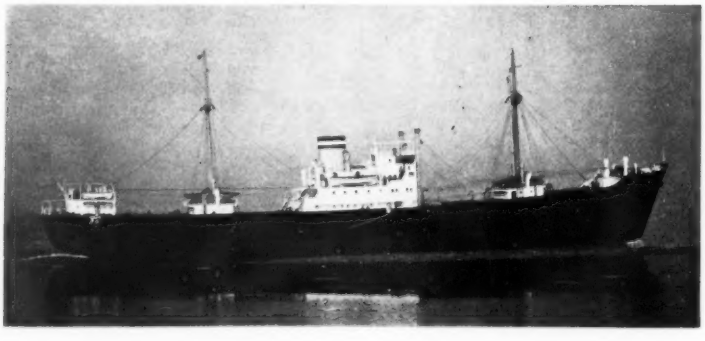
Tug and Water Vessel for Chile

The launch took place on February 28 of the single-screw motor tug and water vessel *Aguila*, building by Philip & Son, Ltd., for the Cia. Sud-Americana de Vapores, of Valparaiso. The vessel, of about 220 tons gross, is intended for service in Valparaiso harbour and is of special design for handling buoys and mooring chains. She has dimensions of 110 ft. length b.p., 25 ft. breadth moulded and 12 ft. 3 in. depth moulded. Fresh water storage tanks of 160 tons capacity are fitted. A firefighting monitor is to be fitted as also are deck connections for salvage suctions and firefighting hoses. The propelling machinery will consist of a British Polar diesel engine developing 680 b.h.p. at 260 r.p.m.

Thames Tug "Sun XVIII"

Built to the order of W. H. J. Alexander, Ltd., the single-screw motor tug *Sun XVIII* has been completed by Philip & Son, Ltd. Of about 110 tons gross, the tug is designed primarily for ship towing on the Thames. She has dimensions of 82 ft. 6 in. length b.p., 21 ft. 6 in. breadth moulded and 10 ft. 6 in. depth moulded. A hydraulic brake prevents the propeller from spinning when the reverse-reduction gear is placed in the neutral position. The propelling machinery has been supplied by Ruston & Hornsby, Ltd., and consists of a 7-cylinder four-stroke single-acting diesel engine. This engine, developing 500 s.h.p. at 430 r.p.m., is fitted with a 3 to 1 reverse reduction gear provided by Modern Wheel Drive, Ltd.



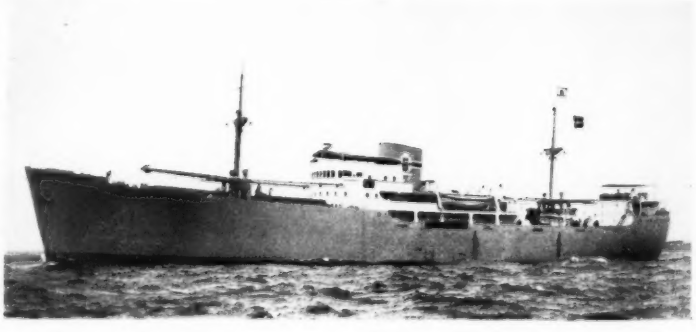


Cargo Liner "Brandenburg"

A vessel of some 2,800 tons gross, the single-screw motor cargo liner *Brandenburg* has been delivered to the Hamburg-Amerika Linie by the Lubecker Maschinenbau-Gesellschaft, Lubeck. Designed for the carriage of general cargo, the vessel has a deadweight capacity of 4,800 tons on a draught of 21 ft. 4 in. She has a length overall of 360 ft. and a breadth moulded of 48 ft. 6 in. The 2,300 h.p. M.A.N. diesel engine provides the ship with a speed of 12 knots. A vessel of the shelterdeck type, the *Brandenburg* sailed from Hamburg on February 14 on her maiden voyage to the West Indies

Polish Fruit Carrier "Piast"

The single-screw motor-driven fruit carrier *Piast* has been handed over to her owners, Gdynia-America Shipping Lines, Ltd. Built by Burmeister & Wain, of Copenhagen, the *Piast* was originally ordered by a Norwegian company but was later purchased by the Polish company. She has dimensions of 315 ft. length b.p., 47 ft. 1 in. breadth and 29 ft. 4 in. depth to upper deck. Her gross tonnage is 3,181 and she has a deadweight of 2,890 tons. Supplied by the shipbuilders, the main engine comprises a 10-cylinder two-stroke diesel developing 4,200 i.h.p. providing a speed of 16½ knots. The refrigerating machinery was supplied by A S Thomas Ths. Sabroe & Co., of Aarhus



NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnages Gross	Approximate Tonnages Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Sheaf S.S. Co.	1	Tanker	—	18,275	—	15	Sin.-scr., 6-cyl. diesel	7,750	Wm. Doxford	Jos. L. Thompson
Burmese Govt.	6	Passenger launches	160 (each)	—	—	—	Sin.-scr. diesel	180 (each)	Crossley Bros.	Yarrow & Co.
Dodwell & Co. (for service at Hong Kong)	5	Passenger ferries	230 (each)	—	—	—	Sin.-scr. diesel	425 (each)	Crossley Bros.	Yarrow & Co.
British Oil Shipping Co.	1	Tanker	—	18,500	—	—	Diesel	—	Sulzer Bros., Winterthur	Blyth D.D.
Cia. de Nav Oriental de Panama	1	Cargo	—	10,500	—	—	Diesel	4,000	Sulzer Bros. Winterthur	Burntisland S.B.
Regent Oil Co.	1	Coastal tanker	—	400	—	10	Diesel	—	Ruston & Hornsby	Chas. Hill
Wm. Cory & Son	1	Self-trimming collier	—	4,600	—	—	Tr.-exp. steam	—	N.E. Marine	Burntisland S.B. (sub-contracted to Hall, Russell)
Wm. Cory & Son	1	Self-trimming collier	—	2,700	—	—	Diesel	1,050	British Polar Engines	Burntisland S.B.
North Thames Gas Board	3	Self-trimming colliers	—	4,600 (each)	—	—	Tr.-exp.	—	N.E. Marine	Hall, Russell
Counties Ship Management Co.	2	Tankers	—	25,000 (each)	—	13	6-cyl. Doxford diesel	—	—	Furness S.B.
Counties Ship Management Co.	2	Cargo	—	10,000 (each)	—	—	4-cyl. Doxford diesel	—	R. & W. Hawthorn, Leslie	Furness S.B.
Grenehurst Shipping Co	1	Cargo	—	10,000	—	14	4-cyl. Doxford diesel	—	—	Swan, Hunter & Wigham Richardson, Wallsend
A. G. Pappadakis, New York	1	Cargo	—	7,000	—	—	Steam turbine	—	Shipbuilders	Wm. Denny
Mersey Paper Co.	1	Newsprint carrier	4,300	—	—	—	Fredriksstad steam motor	—	Rankin & Blackmore	Wm. Denny
Maritime Shipping & Trading Co.	1	Cargo	—	10,000	—	—	Tr.-exp. steam, Bauer-Wach turb.	—	—	John Readhead

Commonwealth and Foreign Yards

Chilean Govt.	1	Tanker	—	16,000	—	13	—	—	—	S. A. John Cockerill, Hoboken
Soc. des Transports Maritimes Petroliers, Paris	1	Tanker	—	18,770	—	—	—	—	—	Odense Staalskibs.
Soc. Francaise de Transports Petroliers, Paris	1	Tanker	—	19,500	—	—	—	—	—	Dok en Werf Maats. Wilton-Fijenoord, Schiedam
Soc. Provencale de Remorquage, Marseilles	1	Tug	—	—	—	—	—	750	—	Industria Navale Mecanniche Affini
Louis Martin, S.a.r.l., Paris	1	Banana carrier	—	—	—	—	—	—	—	Oresundsvarvet, Landskrona
Cie. Franco-Cherifienne de Nav., Casablanca	1	Coaster	—	1,400	—	—	—	—	—	Solvesborgs Varv
Soc. Navale Caennaise, Caen	1	Coaster (to be named Enée)	—	1,850	—	—	—	—	—	Amsterdamsche Droogdok Maats.
Antonios G. Pappadakis, Athens	1	Tanker	—	18,000	—	—	Diesel	—	—	Howaldtswerke A.G., Kiel
Erste Deutsche Walfang G.m.b.h., Hamburg	2	Cargo	4,100 (each)	6,200 (each)	—	12	Diesel	—	—	Howaldtswerke A.G., Kiel
Ozean-Reederei, Emden ; Schulte & Bruns Schiffahrts, Emden ; and Hendrik Fisser A.G., Emden (1 each)	3	Cargo	6,200 (each)	10,000 (each)	439.7 b.p. × 57.75	—	M.A.N. diesel	3,350 (each)	—	Nordseewerke, Emden
Swiss Alpina Co.	1	Cargo	4,400	6,600	—	13.5	Sulzer diesel	2,600	—	Rickmers Werft, Bremerhaven

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages Gross	Approximate Tonnages Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Feb. —	United Africa Co.	*General Leclerc*	Quarter wheeler	—	—	—	—	Diesel	—	Crossley Bros.	Ailsa S.B.
Feb. 28	Cia. Sud-Americana de Vapores, Valparaiso	*Aguila* (1219)	Harbour tug and water vessel	220	—	110 b.p. × 25 × 12.25	—	British Polar diesel	680	—	Philip & Son
Mar. 7	Peruvian Govt.	*Ucayali*	River gunboat	350 (disp.)		154.75 w.l. × 32 × 4 (draught)	12	Tw.-scr. British Polar diesel	800	—	John I. Thornycroft, Woolston

TRIAL TRIPS

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages Gross	Approximate Tonnages Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p	Engine Builders	Shipbuilders
—	Ellerman Lines	*City of Singapore* (626)	Cargo liner	7,340	10,750	450 × 61.5 × 32.75	14	Sin.-scr. sin.-red. geared Parsons turbines	5,500	Shipbuilders	Alex. Stephen
Mar. 5	A. P. Moller, Copenhagen	*Rosa Maersk* (343)	Tanker	8,223	13,000	450 b.p. × 62.66	13	5-cyl., 2-str. diesel	4,700	Burmeister & Wain, Copenhagen	Blyth D.D.

Commonwealth and Foreign Yards

Feb. 22	I.M. Skaugen, Oslo	*Skaubryn*	Pass. and cargo	9,700	8,700	458.42 o.a. and 430 b.p. × 57 × 38	17	9-cyl., 2-str. Gotaverken diesel	8,000	—	Oresunds-varvet, Landskrona
Feb. 22	A/B Tirfing, Svenska Orient Line, Gothenburg	*Vikingland* (406)	Cargo liner	4,365	5,900	400 b.p. × 57.66 × 25.25	16.5	Sin.-scr., 7-cyl., 2-str. B. & W. diesel	6,700	Shipbuilders	Eriksbergs M.V., Gothenburg

We are informed by the Orient Line that the order for a passenger liner reported in last week's SHIPPING WORLD as having been placed by them with Vickers-Armstrongs, Barrow, is incorrect and no such contract has been signed

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

THE NAMING ceremony of the latest of the Merchant Navy class engines was performed recently at Southampton Docks by Mr. A. F. Hull, chairman of Ellerman Lines, Ltd. Named "Ellerman Lines," the engine is the last of the Merchant Navy series to be built at the Eastleigh locomotive works. After the ceremony a luncheon was given on board the steamer *Isle of Jersey* at which Mr. R. P. Biddle, Docks & Marine Manager, Southampton, proposed the toast of Ellerman Lines. Mr. Biddle referred to the large increase in tonnage acquired by Ellerman Lines in recent years and said that he hoped Mr. Hull would in due course be sending some of his ships to Southampton.

A CRUISE from New York to Iceland, Scandinavia, Britain and Eire is to be made by the Cunard liner *Caronia*. Lasting 28 days, the cruise will begin on July 3, and will include a visit to the North Cape to see the midnight sun. This will be the first North Cape cruise since 1939.

LORD MOUNTBATTEN, the Fourth Sea Lord, was the guest of honour at the annual dinner of the Institute of Petroleum. He proposed the toast of "The Petroleum Industry," which was replied to by Mr. B. R. Jackson, deputy chairman of the Anglo-Iranian Oil Co., Ltd.

MR. J. RAMSAY GEBBIE, of William Doxford & Sons, Ltd., and Mr. Charles Connell, chairman of Charles Connell & Co., Ltd., have been re-elected president and vice-president respectively of the Shipbuilding Conference for the year.

THE DEATH has occurred of Mr. Robert Fenwick Brigham, chairman and managing director of Brigham & Cowan, Ltd., shiprepairers, South Shields.

THE Baltic Exchange will be closed from 4 p.m. on Thursday, March 22 until 10 a.m. on Tuesday, March 27.

• • • •

THE TROOPSHIP *Dunera*, of the British India S.N. Co., Ltd., has just completed extensive modernisation to bring her in line with her sister ship *Dilwara*, which underwent similar alterations last year. The work was carried out by Barclay, Curle & Co., Ltd. The *Dunera* will now carry 125 first-class passengers in one, two or three-berth cabins; 96 second-class in two, three or four-berth cabins; and 100 third-class in three, four or six-berth cabins. There will be 705 troops, in standee berths instead of hammocks as formerly. The general level of comfort throughout the ship has been brought up to modern standards.

MR. J. V. SNOW has been appointed Secretary of the Cargo Clearing House of the Industrial Association of Wales and Monmouthshire, in succession to Mr. W. H. Cheshire who has taken an appointment in London as City Representative (Docks) to the Docks & Inland Waterways Executive. Mr. Snow was formerly on the staff of the Chief Docks Manager, South Wales Ports.

DURING 1950, more than 379,000 ships communicated with Post Office Coast Stations. A total of 753,027 radiotelegrams, of over 11,850,000 words, were exchanged between vessels and coast stations. Some 21,500 radiotelephone calls were handled, and 651 messages were received from aircraft.

ALBERTO DODERO, the South American shipping magnate, has died in Montevideo after a heart attack. The Argentine shipping company which bore his name, was bought by the Argentine Government in May, 1949.

A FURTHER increase in the maximum prices for industrial overalls and Merchant Navy uniforms has been allowed by the Board of Trade, and comes into force today. The last rise took place on December 4, 1950.

THE 5,000-tons *Irish Plane* became the first Irish ship to call at Melbourne when she arrived with a cargo of British cars and motor bodies for Melbourne and Adelaide.

MR. S. H. ISAAC, Assistant to Docks & Marine Manager, Southampton, has been appointed Assistant Marine Manager at Southampton.

THE DEATH has occurred of Mr. Frank Douglas Orr, a former director of Brown, Jenkinson & Co., Ltd.

• • • •

THE U.S. Economic Cooperation Administration has agreed to pay $56,000,000 (about £20,000,000) to the U.S. Maritime Administration to cover the cost of bringing 100 vessels out of reserve fleets to carry E.C.A. cargoes, on the understanding that it is returned from freights earned by the ships. These will operate under a general agency agreement. This system was used during the last war. The American shipping industry then operated ships for the Government at $65 (about £23) per day, but it is expected that this fee will be increased to $100 (about £35) a day under the new agreements.

AMERICAN PRESIDENT LINES has applied to the U.S. Maritime Administration to charter the *Schuyler Otis Bland*, which will be completed in April. The vessel, which has a speed of 18¼ knots, was to have been the prototype of a class for mass production in war. It has now been replaced by the "Mariner" class, of which 25 have been ordered.

RADAR was used to detect approaching rain at sea recently by the Irish Shipping Company's *Irish Cedar*. The ship was bound for Galveston to load grain, and the holds were being cleaned. Use of the set, a Marconi "Radiolocator," afforded sufficient warning of rain for the hatches to be closed before its arrival, keeping the holds dry.

IN the caption to the photograph of Mr. T. H. Blackham which appeared in last week's SHIPPING WORLD, he was erroneously described as chairman of the London Underwriters' Association. He is, of course, the new chairman of the Liverpool Underwriters' Association, as previously reported.

MALTESE seamen serving in British ships must now be insured under the Industrial Injuries Scheme as a result of regulations made by the Minister of National Insurance.

WELIN-MACLACHLAN DAVITS, LTD., have issued a statement that their marine superintendent, Captain F. W. H. McCance, has left their service.

LIEUT.-CMDR. H. DUDLEY HAYES, R.N.R., the newly appointed assistant marine manager of the Sperry Gyroscope Co., Ltd., received his pre-sea training aboard the Incorporated Thames Nautical Training College H.M.S. *Worcester*. He served an apprenticeship with Alfred Holt & Company and later served as a junior officer with that company. After eight years service in the Royal Navy in command of corvettes on convoy escort duty, he joined the Sperry Gyroscope Co. in 1947. Commander Hayes in his present capacity will also act as deputy to the marine manager, Capt. G. C. Saul

CAPT. J. B. MACARTHY who has succeeded Capt. Hicks as commodore of the Eagle Oil & Shipping Co., Ltd.'s, fleet, is the first member of the Eagle fleet to rise from apprentice to commodore captain. He served his apprenticeship in the *San Tirso* from 1914 to 1918, gained his master's certificate in 1922 and was appointed permanent master in 1937. During the Second World War he was awarded the O.B.E. for his services as master of the *San Felix* during the time she served as an experimental storeship and fleet oiler in the "Palk Strait Scheme." Capt. Macarthy is at present in command of the *San Salvador*

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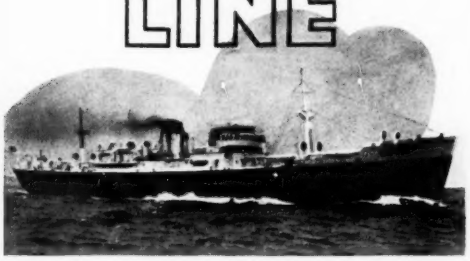

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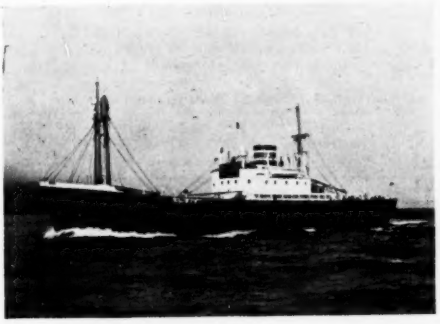

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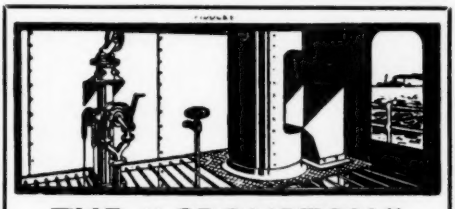

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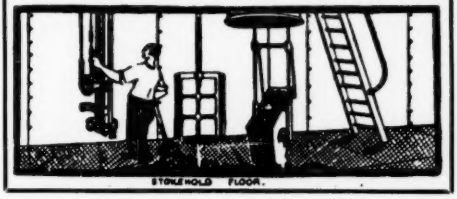

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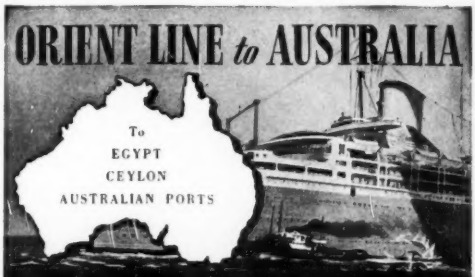

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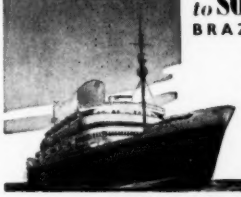

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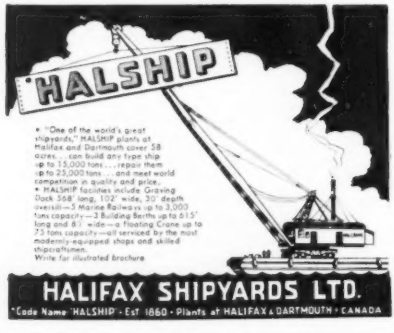

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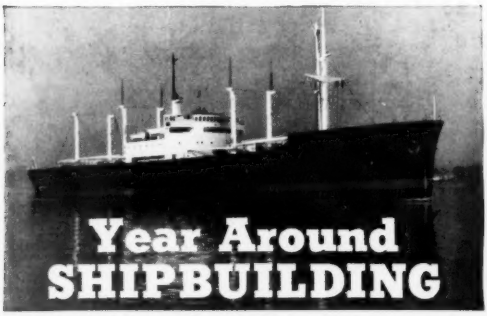

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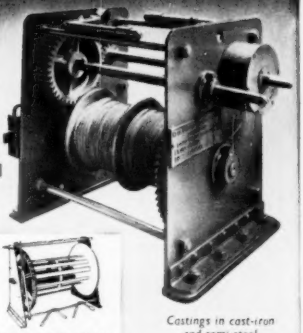

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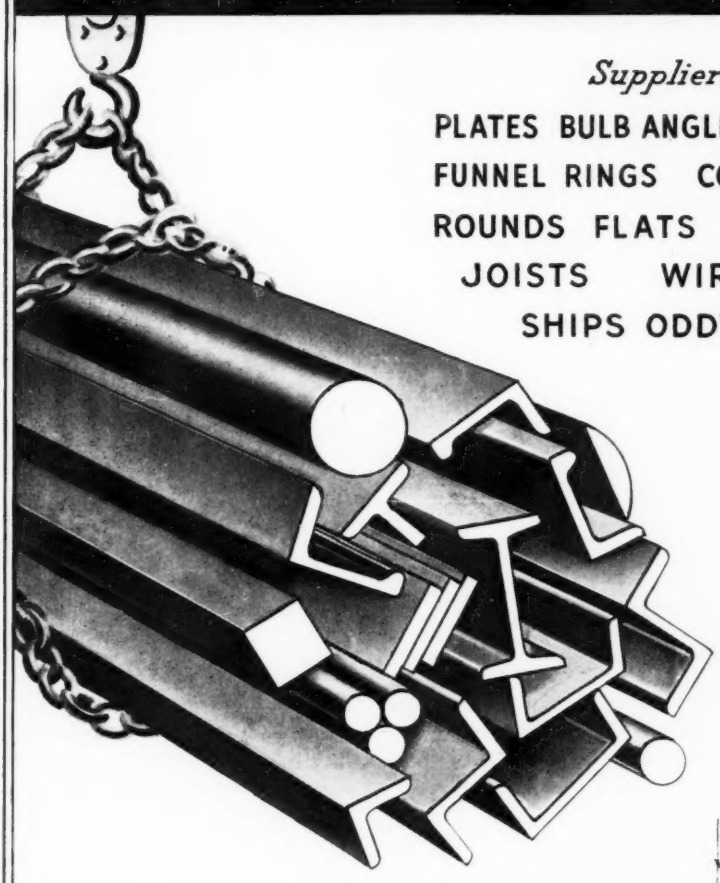

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